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[Lord Dawson sketched a historic background to his picture, and reviewed briefly the medical problems which marked the early years of the past century. He laid stress on the lamentable housing and drainage, and pointed out that in the year of the Association's birth the country was in the throes of a cholera epidemic from which the number of deaths in England and Wales exceeded 50,000. For the sick and disabled or for those who tended them it was, he said, "a struggle in the darkness with little to lighten the pathway till the 'eighties of last century." Lord Dawson proceeded to describe how the ferment of new knowledge worked in the long waiting period between the 'fifties and the 'eighties, and set out in sequence the grand contribution to medicine of Pasteur, Lister, Koch, Manson, and Ross, showing how coöperative work and the growth of scientific method had led to the understanding of the nature of man's fellest foes and the devising of preventive and curative measures. He then invited his hearers to consider how the new truths were received.]

THE ACCEPTANCE OF NEW TRUTHS

It is interesting to reflect on the varying degrees of difficulty which new truths have to encounter. In retrospect one wonders at the want of receptiveness in men's minds. That the discovery of the anthrax bacillus in the blood of patients roused men's minds, while the previous discoveries in the blood of the malarial parasite (1880) and of the spirillum in relapsing fever (1873) were but little noticed, is an instance of how the implantation of truth depends not only on its discovery, but on the readiness of men's minds to receive it.

The history of anæsthesia affords a striking example of how long truth may remain unheeded. The anæsthetic properties of nitrous oxide were described by Humphry Davy in 1800, and those of ether by Faraday in 1818. Hickman tried in both England and France in the years 1824 to 1828 to secure consideration for anæsthesia as a practice. Yet despite repeated stimuli the imagination of the medical world remained untouched. To the year 1844 does not belong the discovery of anæsthesia but its acceptance—nearly half a century after the birth of the idea.

On the other hand, it cannot be said that the acceptance of the infective theory of disease and its meanings lingered unduly, and this was no doubt due in large measure to the qualities of character of its apostles. Pasteur had to dissolve long-established belief and he did it by a notable quality of appeal. From his genius came a revelation which time is still unfolding. Lister had not only to win men's minds, but conquer the fixed habits of a craft and he did it with a patience only equalled by his persistence. Nevertheless a generation of disciples bred in its methods was needed to bring his teaching to fruition. Even he from the heights of Pisgah saw but dimly the promised land—neither encompassing the surgery nor performing the operations which his own discoveries had rendered possible. The beauty of Lister's character is illustrated in a letter he wrote to Pasteur in 1874:

"Allow me to take this opportunity to tender you my most cordial thanks for having by your brilliant researches demonstrated to me the truth of the germ theory of putrefaction, and thus furnished me with the principle upon which alone the antiseptic system can be carried out. Should you at any time visit Edinburgh, it would, I believe, give you sincere gratification to see at our hospital how largely mankind is being benefited by your labours."

Thus with the early years of this century the craft of surgery, never lacking in technical skill, was set free, and with results fruitful of great benefit to mankind. It has lately been stated with authority [1] that the craft of surgery had "almost reached the end of its progress along the lines which so far it has followed," that "the full fruits of Lister's work have now been garnered," and that with operations now carried out upon every organ in the body little further success can be expected. This gives me to wonder and to think. Surely surgery has not reached so gloomy a finality. "Life is short, but Art is long." Listerism, which freed surgery of its chains, is surely a great permanent possession which conditions all progress, but without determining the nature or limit of that progress.

On the other hand, has not the extension of the field of surgery been determined by the growth of knowledge derived from physiology and pathology and by improvement in technique? The researches of Pavlov gave inspiration to the surgery of the alimentary tract, and radiology and chemistry have been increasingly reliable guides. The change is not in facts but in habits of thought. At the beginning of this century, when surgery took possession of the freedom Lister bestowed upon it, there was a bound ahead and with it an exuberance of craft, which was sometimes forgetful of physiology and wider clinical considerations. That detachment has passed and surgery has come back into the fold of medical knowledge. And has not the craft of surgery large fields yet to conquer? There come to my mind the thorax, the arteries, the nervous system, and the ductless glands, as examples which are on the threshold of their possibilities, whether of purpose or technique.

Chemistry and Physics in the Service of Medicine

In the present century physics and chemistry in linkage with physiology have taken pride of place in their services to medical knowledge. The growth of the science and craft of radiology following Rontgen's discovery in 1895, and the development of radium therapy, have been features of the present century.

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* The president's address at the Centenary Meeting of the British Medical Association, delivered on July 26th, 1932.

[1] Romanes Lecture (1932) by Lord Moynihan. A similar view was expressed by Prof. Erichsen in his introductory address at University College, London, in 1873.

England is so proud, will be more and more a guiding star of progress.

A word on the aid which chemistry has afforded to therapeutics. It is giving us the active principles of long and well-established remedies and so helping us to precision. It has provided us with invaluable synthetic anodynes, hypnotics, and sedatives—much needed in this hustling, nerve-racking world. Not least of its gifts are the means of inducing sleep and content as a prelude to anæsthesia—though we still await with hope an anodyne, local or general, which will ensure enduring freedom from pain, for there is no more powerful means of healing than the assuagement of pain and the lure of forgetfulness. Chemistry is further giving us specific remedies, the chief of which belong to the dyes and compounds of arsenic. Trypan-blue, the substance known as 205 and its derivative 307, cure or control trypanosomiasis—thus conferring benefits on those who have to inhabit the vast districts ravaged by the tsetse fly. The cure of syphilis by arsenic and the discovery of its causal spirochæte are alike achievements of the present century. Pernicious anæmia, until recently a fatal malady, has, by the discovery of the anti-anæmic factor in liver and stomach by Minot and his colleagues, been converted into a simple deficiency disease.

ULTRA-VIOLET RAYS: VITAMINS

Though sunlight therapy dates back to Hippocrates its scientific application and that of artificially produced ultra-violet rays belong to the last 24 years. The treatment of tuberculous bones and joints by sunlight and immobilisation has wrought wonders, and as in the case of phthisis has achieved an even greater good by the habits it has engendered among the healthy, for every patient cured becomes an apostle of light and air, often to the distress of his or her family.

One great interest attaching to these rays belongs to rickets. Here is a disease (a vital change) associated with deficiency of calcium. The ultra-violet rays produce, by their effects on the ergosterol in the skin, the vitamin D, which restores that deficiency. Here then are physical, chemical, and physiological events in causal sequence. The unfolding of the story of the antirachitic vitamin is a romance and a triumph of the experimental method for which this country deserves the chief credit. The isolation of this vitamin in crystalline form has been accomplished and the crystalline calciferol is so potent that it has 400,000 times the value of an equal weight of cod-liver oil,[2] and one ounce of it could produce the necessary daily ration for a million children—truly the "little leaven." A practical application of vitamin D to the formation of the growth of healthy teeth in children and prevention of their decay initiated by Mrs. Mellanby gives promise of far-reaching results in the promotion of the health of the coming generation.

There are now seven vitamins known, each of which is related to some indispensable function. They activate chemical changes within the tissues that underlie nutrition, on the study of which hang national issues. As regards the body, vitamins are imports, whereas hormones are home-grown products manufactured by the glands and disbursed by them into the blood stream.

HORMONES

These bodies have a definite chemical composition, and like vitamins are potent in minute doses and are selective in their actions. They are produced as required by ductless glands, are carried by the blood, do their work and disappear. Some of them are relatively simple in their action. Thus secretin (described by Starling, to whom we owe the first description and conception of these bodies) has the relatively simple rôle of a chemical reflex. The formation of secretin having been provoked by the appearance of acid chyme in the duodenum, is absorbed into the blood, travels to the pancreas and liver and evokes the secretion of their digestive juices, and disappears. Again, the minute parathyroid glands, each measuring no more than 6 by 4 millimetres, have a relatively limited function in maintaining the level of lime salts in the blood. Let them be removed, the calcium content falls and tetany appears. Administration of parathyroid extract restores the calcium level and cures the tetany. Let these glands become overactive and the bones of the skeleton lose their calcium support and fractures ensue.

The suprarenal glands, regarded by the ancients as having miraculous powers, described by Eustachius in 1543 and by Addison from the clinical standpoint in 1835, are now known to produce two hormones—adrenaline from the medulla and eucortone from the cortex. It is of interest to note than an adrenaline-like substance is produced at the peripheral sympathetic nerve-endings either by direct stimulation or by emotion. The remarkable results which follow the administration of eucortone in Addison's disease more than suggest that yet another fatal disease has been mastered and a substitution therapy realised.[3]

Some of the internal glands have a wider range of activity and extend their influence over the mind and character. Have too much thyroid gland: the fires of life burn too fast and easily, the mind is too impressionable and meets life's troubles more than half-way as shown by the staring eyes, the trembling hands, and the palpitating heart. Remove a portion of this thyroid gland and the wheels of life move with more smoothness and content. Possess too little thyroid gland: the fires of life become a smoulder, you are cold in body and mind, you are a dullard in feeling and appearance, slow in thought, word, and deed, you may hardly have a soul. Then take thyroid extract and once more you feel—and look—human. The active principle of the thyroid extract—namely, thyroxine—thus determines our weal or woe by its quantitative gradation and those mental and emotional qualities which make or mar us. We are here also brought in contact with problems of conduct and self-determination.

But surely the pituitary is the wonder world of the ductless glands. This structure, consisting of two lobes and set in the base of the skull, though weighing not more than three-quarters of a gramme, in a special sense presides over our destiny. The anterior lobe is the source of no fewer than four hormones which are concerned with growth, metabolism, and sex activity. The posterior lobe is the source of two hormones which are concerned with vasoconstriction and (in the pregnant woman) with parturition. I will restrict my attention to the sex hormones of the pituitary gland, and consider with them the hormones of the ovary and testicle, because the harvest of new knowledge gathered in increasing measure with the succeeding years is giving indications, not only of clinical usefulness, but of influence on scientific thought and sociological reactions.

The ovary produces two hormones, one from the

[2] Report of the Medical Research Council, 1930–31, p. 10.

[3] Swingle and Pfiffner, 1930; Theodore Thompson and B. F. Russell, THE LANCET, July 23rd, 1932, p. 178.

ovarian follicle (œstrin) concerned with ovulation and œstrus and the other from the corpus luteum (progestin) which prepares the uterine mucosa for the reception and retention of the fertilised ovum. With failure of this secretion, progestin, the embryo does not become fixed in the uterus and dies. But both these ovarian hormones are mobilised by the over-riding influence of the anterior pituitary hormone prolan. Transplantation of a piece of the anterior pituitary body will by stimulating the œstrin hormone render, after the lapse of three or four days, an infantile female rodent sex-active and sex-attractive, thus pushing forward its sex maturity. From the posterior lobe of the pituitary gland comes besides the vaso-pressor extract a hormone (oxytoxin) which by stimulating the pregnant uterus initiates parturition. In this the originating influence is thought to be the ovarian hormone (œstrin), which sensitises the uterus to the action of the posterior pituitary.

Here then is a wonderful kingdom over which the minute pituitary gland rules enthroned in the middle of the skull. This gland presides over the destinies of ourselves and our descendants. The anterior lobe influences our growth and our sex, its dominance and degree. Without it, no sex desire, no conception; without the posterior lobe, no parturition. Perhaps Descartes was not far afield when he placed the soul in the pineal gland.

Further, the female sex hormone has been obtained in crystalline form from the urine of pregnant women and has a chemical structure represented by $C_{18}H_{22}O_2$, and one forty-millionth part of a gramme of this pure substance produces œstrus in the mouse; and last year we learned that the male hormone had also been crystallized and has a probable formula of $C_{19}H_{26}O_2$, and one ten-millionth of a gramme of this substance is active and provokes marked comb growth in capons. Tribute is due to biochemists for these advances in knowledge, and especially to the young German chemist Butenandt. It is truly wonderful that so apparently slight a difference in the chemical structure of the male and female hormones should carry with it so vast a physiological distinction.

> "Oh the little more and how much it is!
> And the little less, and what worlds away!"

This expanding volume of knowledge must in time make clearer certain problems of sex in health and disease. Further, it perhaps foreshadows the time when sex perversion will belong more to pathology than to crime and require medical as well as legal handling.

There is evidence that even in the individual cell the action of oxygen is regulated by an activating factor or catalyst. In therapeutics too we think of a remedy as being provocative of change without sharing in it and perhaps breaking up after its provocative message has been delivered. That a vitamin or hormone can in minute quantity produce so extensive a physiological change suggests that it is determinant of, rather than a partner in, that change. The material units in germ or sperm—the chromosomes, which are concerned with inherited characters—are determinants which influence, rather than particles which participate. This dynamic conception suggests means of accord between processes of body and mind with both of which doctors are concerned. Maybe, the hormone is a go-between—a physical embodiment of influence.

To revert to bacteriology: the knowledge of immunity foreshadowed by Edward Jenner, established by Pasteur, rationalised by Ehrlich and others has grown and extended. In this country the mantle rests on the shoulders of Almroth Wright, who has enriched medicine not only by his discoveries but by provocative thought. The study of immunity brings us to realise how remedy lies within man himself—a potential energy which becomes kinetic in the face of the foe. Such remedy is aroused by external stimuli; true it may be temporarily replaced by serum, but its origin and its power must come from within the tissues of the body. So it is with the hormone or the vitamin which is a determinant of rather than a partner in bodily reaction. If I may be tempted to make a parallel not complete, but adequate, a study of the body politic suggests that there is within it a power of recuperation which is called forth by morbid social processes. Of this it would be easy to produce examples from the life of to-day. The reaction of immunity may be provoked and encouraged from without by a process of progressive stimulation, but salvation lies within the organism itself—"Behold, the Kingdom of God is within you." How great a confidence does such an ordering of things inspire!

THE VIRUS DISEASES

Certain diseases of man, animals, and plants are caused by particulate organisms so minute as to be (most of them) invisible under the microscope and passable through filters which catch bacteria. I may give as examples: in man, measles, small-pox, infantile paralysis; in animals, foot-and-mouth disease and dog distemper; in plants, tobacco and banana diseases. These viruses are specific and multiply in the bodies of their hosts; some are highly contagious; some are transferable from the sick to the healthy by insects.

In size the "virus" organisms would appear to begin where the hitherto known bacteria end, their varieties tapering away into intangibility. It is their smallness which taxes not only our resources but our comprehension. We might even think of their size in terms of molecules. But history is repeating itself, and as histology and bacteriology needed for their being the completion of the compound microscope in 1830, so developments in the science of optics are aiding the study of the viruses to-day. By the use of the short ultra-violet rays and quartz instead of glass virus organisms have been photographed and measured.

Do not viruses in essentials "live and move and have their being" much as do visible pathogenic microbes?

The Art of Healing

The art of medicine embraces the understanding of illness no less than the morbid process, and if the physical and biological sciences are given a too exclusive attention they are apt to give to medical thought a too pronounced objectivity. We welcome their guidance and even their chastening but we have to be naturalists as well: we need to take count of the whole man.

What of personality and its infinite variety? What of environment? In these days when diseases of invasion are receding and diseases of stress loom larger both these factors receive accentuated importance. A man's physical and mental make-up, his inborn trends, play no small part in the clinica picture he presents. To take simple examples—in similar circumstances of stress one type of man will get hyperchlorhydria, hypertonic stomach, and it may be duodenal ulcer, while another man gets hypochlorhydria and an atonic stomach. Some people are born with achlorhydria and its attendant

disadvantages. Again, one type of man develops high blood pressure, while another type in like conditions develops low blood pressure. And so with the mind; its make-up both inherited and acquired may colour or even confuse the picture presented by a physical illness. The latter may release some buried or suppressed emotional experience which in its turn will produce further physical reactions. To effect a cure both aspects of the illness must be studied. This wider comprehension demanded of medicine may be set forth by an illustration.

Given a business man, efficient, impressionable, courageous: his parents brought him up in the cold shades of virtue and not in the sunshine of the understanding heart, so he had learnt repression, not self-expression. He gets overworked, loses confidence in himself, doubts the rightness of his calculations and decisions, suffers self-depreciation, anxiety, insomnia; and all this hidden behind an outward appearance of carrying on cheerfully. At this point the stress may take effect in one of several directions. For instance, it may knock out the nervous system regulating the intestine; the diagnosis is "colitis"; he is satisfied—"Here is the cause of my troubles—a microbe in my intestine." If the microbe is not crushed very soon and the illness lingers, he is told he is "nervy"; this causes a pang of self-reproach; he retires into his shell, his colitis gets worse, and he drags on until we hope he meets a doctor with a more comprehensive outlook.

Pervading these problems there is a fundamental error of thought—namely, that disturbances of your mind are under your control and are therefore your fault, whereas disturbances of your body are not under your control and are therefore your misfortune. This false doctrine of control, and all the perversions of the doctrine of free will with which it has long been entangled, is responsible for much faulty thinking and human suffering. Self-control can be bought too dearly or sought where it ill belongs.

And next as to treatment of these complex cases. Apart from remedies which are specific and those which assuage pain and assist relaxation and sleep, efficient treatment lies in comprehensive diagnosis. It is sometimes only necessary to explain an illness for the patient to cure himself. Let the doctor understand the component parts of the picture and explain faulty trends of thought and feeling and their relation to bodily function. Thus restoration of perspective and reassurance will follow and the patient will be put on the road towards health. True, the faults and errors may be too ingrained for remedy by a single readjustment; then the treatment becomes educative, and needs the discerning mind, reasoning which is persuasive, and those further gifts of the teacher—the power to give from himself understanding and confidence, and this the more effectively because unwittingly. It is far easier to prescribe medicine than to give the patient healing.

Kinship between Medicine and Education

This increasing kinship between medicine and education leads to further reflections. Our public medical services and the various voluntary agencies which have the same objective should be judged even more by what they teach than by what they provide. The infant and child welfare clinics and the school medical services respond to this test. They have given parents not only help but vision of better things and have stimulated individual effort. And does not medicine teach this to be the touchstone of sound statecraft? Health like healing comes in last resort from within. Stimulation and assistance from without—yes; but such must not replace or outpace the integrating process within. If they do, there follows a negative phase of inertia and a paralysis of that individual endeavour on which depends the onward march of the organism. Has not latter-day statesmanship fallen into this error?

There is now alike ability and desire to investigate illness in its early or potential stage, and this aim of constructive health has increasing support from the public. We see it on the preventive side in the work of the Industrial Health Board by means of which the misfitting of the worker to his task with its tale of ill-health and unhappiness is avoided or ameliorated; stress of body and mind and the balance between effort and relaxation are studied, to the advantage of the work and the contentment of the worker. Many large firms have welfare organisation on similar lines.

Persisting deviations from fitness require investigation. Hospitals and clinics will be needed for every class of citizen. There investigations can be made and results marshalled and at less cost. Care will need to be taken that general practitioners do not become separated from their patients when the latter enter hospitals, for such would damage professional efficiency, to the disadvantage of the public.

When the nature of the defects is disclosed, the mere giving of medicines will often accomplish but little. What the patient wants is regimen and re-education in methods of living; treatment, it may be by diet, physicotherapy, and relaxation under controlled observation. Such treatment or education of the man and his tissues might take several weeks, and in most instances it would be advantageous for such patients to continue their ordinary avocations. We need a new type of institution—distinct from hospital provision—namely, a health hostel. Examples flow from any physician's experience. Overweight—the man of 40 getting a fat body and a fat head, who avows himself a small eater yet is clogged with his own metabolic products; the man becoming set about the neck and waist, who turns his body slowly rather than his head and eyes quickly, or who is bluish and breathless, losing his rib movements and wants to "stay put." Then the various gastro-intestinal victims who need to be taught how to eat, how to digest, and to regulate their bowels, and perhaps to be cured of their "conscious abdomens." Then again the patient in the early diabetic stage, where not only himself but his wife needs instruction in food calories and cooking, and it may be in the administration of insulin. All such and many more need for a space a designed environment; they require education but under the conditions of their working life. Such institutions must have a kitchen under a trained dietitian, and a physicotherapeutic department; skilled control, but no cults or fads. It would prevent disease in untold measure and would be self-supporting and even profitable. The cost to the individual might where necessary be defrayed out of that comprehensive sickness insurance scheme which we wait long and wearily for the vision and constructive ability of the insurance companies to provide.

The good of the people demands education in matters of health. Would it not be possible for the medical faculty of a university to include among its functions the provision of approved health lectures when such are demanded by the districts within the area of its influence? In this way sound educational standards would be maintained—fads and fancies avoided. The objective of such teaching should be a

knowledge of health with only incidental or illustrative reference to disease. The result would be great saving of illness and therefore in a few years of expense. Medical insurance costs employers, employed, and the State 36 millions of pounds a year. Not the least advantage of education would be to dissipate belief in the magical with its false gods, and to inculcate belief in the reign of law and its close pursuance as the only way:

"Spells? Mistrust them.
Mind is the spell which governs earth and heaven."

Research

Nature will not yield her secrets on demand, nor can discovery be bought. You can decide a path of inquiry but neither its end nor its exact direction. Our aim should be to secure the men—to enable those possessing the ability and while still young to live free of anxiety so as to seek out the secrets of Nature. The medical sciences are so embracing that their pursuit yields results beyond those of direct human application. I need only instance the study of genetics or that of virus disease. Take foot-and-mouth disease and diseases of potatoes and bananas. These concern not only our food but by their ravages involve the loss of vast sums of money.

In this country the quest for new knowledge is to be found in all and varied quarters, and a rich harvest is being gathered. The Medical Research Council is doing a great service in supporting and directing efforts wheresoever they come, and it maintains contacts between workers and between the institutions to which they belong. There is, however, need for further coördination among bodies which represent varied aspects of medical knowledge, such as the basic sciences, medicine, surgery, obstetrics, education, and administration. It is a reproach against our profession that we do not establish means of giving collective advice when the art of government depends increasingly on our knowledge. Gods on Olympus, however wise, cannot in detachment represent collective authority. Corporate advice could be forthcoming only if there existed the means for its expression. To the hackneyed saying that "doctors always differ" let me reply that the vain repetition of error does not convert it into truth. In fact, there is no sphere of learning in which consensus of opinion on matters of importance is so forthcoming as in that of medicine. Contrast with it, for example, economics or politics, and recall the confusion of tongues over the cure of our post-war afflictions—and it is an intellectual exercise and even a treat to hear one court of law upset the decision of another.

Conclusion

If we look back, what a panorama presents itself during the life of this Association; and never was there greater promise that the advancing front of knowledge will "make one music as before, but vaster."

Pursuit of knowledge in the medical sciences not only brings results prolific of benefit to mankind, maybe by adding to life's quality or lightening the burden of suffering, but its very pursuit makes doctors of every nationality and clime into comrades who, animated by the same ideals, think and work together—the gold of endeavour without the alloy of conflict. Does not this distinguished gathering of guests, whom I am so proud and happy in your name to welcome, bear witness? Be it remembered, there burns in our temple not only the lamp of reason but the lamp of service. These together betoken the qualities of wisdom and the understanding heart, and that desire to know "Who is my neighbour?" which gives to life its savour and to humanity its hope and purpose.

A CONTRIBUTION TO THE STUDY OF INTERMITTENT HEADACHE

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The term migraine is generally used to indicate, in the words of Collier,[1] "a common malady of which the only essential characteristic is recurring intense headaches . . . often associated with vomiting . . . and with peculiar disturbances of vision." Collier further points out that "considering how very common migraine is . . . any visual phenomena except slight confusion of vision accompanying the attacks are rare"; still more exceptional are the transient attacks of aphasia, hemiplegia, ophthalmoplegia, and the sensory auræ which attain such prominence in the average text-book account of the condition.

It is clear that migraine usually declares itself first in early youth, tends to diminish in severity after middle life, and frequently disappears completely in old age. A familial history is common, and women are affected more than men. In women it is well known that the paroxysmal attacks are apt to be associated with menstruation. Apart from the rare cases in which migraine is a consequence of chronic renal disease or of a latent cerebral tumour, there is very little exact knowledge of its cause, and in the absence of information theories abound. Spitzner's opinion that hemicrania may be due to intermittent distension of a lateral ventricle, owing to an inborn abnormality of the foramen of Monro, has pathological evidence to support it, but in the vast majority of cases of intermittent headache no satisfactory explanation of the symptom can be found. It is true that in a small minority the success of treatment warrants the belief that migraine may at times be due to sinus infection, apical abscesses of the teeth, errors of refraction, protein sensitivity or, more doubtfully, alimentary toxæmia, but it is probable that within the term migraine are included many headaches of different origin.

The purpose of this paper is to describe a series of cases of intermittent headache occurring particularly at menstruation, in many of which abnormalities in the sella turcica were demonstrated radiologically, and to record the comparatively satisfactory results of a method of treatment for which a rational basis is afforded by recent experimental work in physiology.

Case Records

Case 1.—Mrs. A. was referred to me by Dr. B. Dale, of Edgbaston, on Oct. 24th, 1930.

She was then 42 years old, of healthy appearance and average height and development. About 15 years previously, soon after her marriage, she had an abortion at the third month, but subsequently never became pregnant, though she passionately wished to have a child. Her husband had been examined and found to be normal sexually and in every other respect.

She complained that for about 20 years she had been subject to violent attacks of headache at menstruation, which was usually regular with a normal interval of 28 days. Recently she had also been liable to similar but less severe headaches midway between the menstrual periods. The flow was almost invariably scanty and never lasted more than two days; the headaches started 24 hours

before the period began, and lasted 48 hours. She described the pain as "blinding," but there were no other visual symptoms, and she could not refer the pain to any particular region of the head. Nausea and retching occurred occasionally, but there was not often vomiting.

Of the extreme severity of the pain there could be no doubt; by the kindness of Dr. Dale I saw her during an attack and she was completely prostrate—pale, sweating, with rather a feeble pulse. There was also marked photophobia. I agreed with Dr. Dale that the use of morphia was justifiable.

Physical examination was completely negative: in every respect she appeared to be a normal woman. The blood pressure and urine were normal; the fundi were clear, and there was no limitation of the visual fields to rough clinical tests.

Temperamentally, she seemed to me unusually stable: she confessed that at times the dread of the torture that she knew she would suffer at menstruation, and her sterility made her nervy and depressed, but in general she was bright and active and interested in life; she hardly ever complained of headache in the intermenstrual period. In the past she had been subjected to much investigation and treatment without result, and she was frankly doubtful if anything could be done for her. The close association of the headaches with menstruation and her sterility had brought her into contact with gynæcologists, and she had been dilated and curetted on many occasions, and various operations to correct slight malpositions of the uterus had been undertaken. Exhaustive investigation in Switzerland suggested that she had mucous colitis, but prolonged treatment by douching, drugs, and vaccines brought but slight relief for two months. When I saw her there was some spastic constipation, but nothing worthy of the name of colitis. Some years ago, much against her wish, she stayed in bed for six months and got slight relief, only to find that the headaches returned with equal intensity when she got up.

At our first consultation I formed the opinion that her headaches were due to some metabolic disorder, and I asked Miss E. M. Hickmans to make an estimation of the blood calcium and phosphorus during a normal interval and also during a headache. The results were as follows:—

	Normal interval. (per 100 c.cm.)	During headache. (per 100 c.cm.)
Serum calcium ..	11·03 mg.	9·58 mg.
Plasma phosphorus	3·85 mg.	3·03 mg.

The pronounced drop in the serum calcium while the headache was present suggested that in some way it might be responsible for the symptoms, and she was given calcium lactate grs. 90 daily for one week before menstruation, and three injections of 10 units of parathormone during the same period. There was no relief.

It subsequently occurred to me that some lesion of the pituitary might cause both the headaches and scanty menstruation, and I suggested that Dr. Dale should try the effect of injections of the ovarian follicular hormone in the week before menstruation. Not only was the headache completely relieved, but menstruation became less scanty and lasted four or five days.

Since that time Dr. Dale, by careful observation, has proved that in this patient three injections of 1 c.cm. of Œstrin or Theelin in the week before menstruation will completely protect her from headache; with two injections headache may occur, but it is milder in degree and does not require morphia for its control. Dr. Dale also satisfied himself that suggestion played no part in the result, for if he withheld œstrin and injected something else without the patient's knowledge, the headache recurred.

A year after beginning treatment, at her own request, she was allowed to do without the injections (which are painful) and passed through a normal period without headache: the following month, however, when œstrin again was not given, the headache returned with all its old severity, and morphia had to be administered.

In May, 1931, at my suggestion the skull was radiographed by Dr. Harold Black, who reported that the sella turcica was normal in size, but that the diaphragma sellæ appeared on a lateral view to be completely calcified.

CASE 2.—Miss B., aged 34, was sent to me at the General Hospital, in June, 1931, by Dr. Mildred Russell, of Walsall. She had complained for some years of very severe headaches at menstruation, which in her own words "affected her sight and made her sick."

Occasionally she had headaches of the same type in the intermenstrual period, about eight or ten days after the flow had ceased. The relationship in time between menstruation and the headaches, although obviously very close, was not as definite as in Case 1, for in this instance the pain began just before, during, or just after the period. Menstruation, apart from the associated headache, was usually normal in rhythm, interval, duration, and amount. She was a slimly built woman, but clinical examination revealed nothing abnormal except a rather doubtful pallor of the optic discs. Temperamentally she was "highly strung," but she volunteered the statement that the headaches and the fear of them had made her nervy.

My experience with Case 1 led me to get her skull radiographed, and Dr. C. G. Teall reported that "the sella is not enlarged, but is bridged by bone." She was almost completely relieved of her headaches by œstrin administered as in Case 1.

CASE 3.—Mrs. C., aged 53, consulted me on Oct. 15th, 1931, on the advice of Dr. Fraser Brown, of Moseley. For many years she had been regarded as a bad neurotic, principally because she complained of frequent severe headaches for which no cause could be discovered despite very elaborate investigations.

On inquiry I found that during her adolescence and early married life the headaches occurred almost always at menstruation, which was otherwise normal in every way, and she also told me that she was free from headaches during her pregnancies. For some 20 years, however, the headaches had occurred apart from menstruation, and recently (she is now passing through the menopause) they had been almost continuous. She was a spare, nervous woman, obviously a little wasted and anæmic (hæmoglobin 65 per cent.). The loss of flesh and probably the anæmia were due to a deficient diet, for she had in the course of years given up one by one various articles of food because "they seemed to make her head worse" or because she had been advised to do so.

Physical examination was negative, but on inspecting some radiograms which had been taken a few years previously in the course of an investigation of her nasal sinuses I noticed some abnormal shadows in the region of the diaphragma sellæ, and it struck me that she might be a case similar to the two already described. She obtained partial but definite relief from the ovarian hormone, but suffered a relapse after a domestic shock and an attack of influenza.

When I described these three cases at a meeting of the Midland Medical Society, in November, 1931, I said that I should be glad to have the opportunity of investigating the matter further, and during the next week no less than five women were referred to me by members of the society, with headaches similar to those of Case 1: four of them were shown to have abnormal calcification in the suprasellar region, but the fifth was radiologically normal, though her symptoms were indistinguishable from those of the others. Since that time I have seen ten further cases with well-marked radiographic changes, and seven others with similar symptoms in whom the sella turcica appeared normal. The total number of cases is therefore 25, of which 17 had well-marked abnormalities in the radiographic appearance of the

sella turcica. It would be merely tedious to publish the individual histories at length as they were in most respects similar.

Analysis of Symptoms of the Group

The presenting symptom of all the patients was severe intermittent headache, which had occurred with particular intensity at the time of menstruation, and they were all regarded as cases of migraine; most of them had been subjected previously to a considerable amount of investigation and treatment without benefit. In 17 the headache commenced some hours before the period; in three it began simultaneously with menstruation; and in the remainder it occurred at varying intervals (up to four days) after its onset.

In 15 cases the headache occurred at menstruation and at no other time; in 10, similar headaches developed at irregular intervals, as well as at the period, and in 3 of these they were almost continuous.

One case, of the last group, was seen at the age of 55, seven years after the menopause; the headaches were not as severe as in earlier life, but were more frequent and persistent. The history of this patient was corroborated by her doctor, and showed that in adolescence and during middle life the headaches had always been most severe at menstruation.

Of the 12 women in this series who had borne children, 8 stated that the headaches did not occur during pregnancy and the amenorrhœa of lactation; one of these told me that she had been advised by a distraught out-patient physician at another hospital to have a baby every year because nothing else seemed to relieve her. Four patients said that the headaches were less severe during pregnancy, but occurred fairly frequently.

With few exceptions, menstruation was regular and had a normal rhythm of about 28 days. In 1 case there was amenorrhœa, in 7 the flow was scanty and limited to two days—all of these had well-marked radiological changes—3 had somewhat excessive menstruation, but in the remaining 14 the loss appeared to be normal in amount and duration. Only one patient complained of lower abdominal pain and backache at the period. This variability of menstrual activity is presumably related to differences in degree of the pressure to which the basophilic cells of the anterior lobe of the pituitary were subjected; it corresponds very well with that described by W. R. Henderson,[2] in Cushing's series of adenomas of the pituitary body.

In every instance in this series the outstanding feature of the headache was its severity; I frequently thought that patients were exaggerating the intensity of their suffering, but after questioning their doctors and their friends it was impossible to doubt the reality of it, and certainly the eight women that I have seen while the pain was present appeared so gravely ill that, if I had had no knowledge of their history, I should have suspected them of some serious organic intracranial lesion, such as subarachnoid hæmorrhage or early meningitis. I have deliberately excluded from this series all cases of the mild neuralgic type of headache that is not uncommon at menstruation.

Very few were able to localise the headaches; in some the pain seemed to be felt most acutely in the frontal area, in six it was most severe in the occipital region, but in general it was diffuse. The headache was never unilateral and never of the expanding type of classical migraine.

Apart from photophobia and dimness of sight there were no visual symptoms—certainly none of the elaborate stars and fortification figures described by some cases of hemicrania. Sensory auræ, ophthalmoplegia, aphasia, and transient paresis never occurred. Vomiting was rare, but nausea and retching were common.

The Radiological Changes

Of the 17 cases with radiological abnormalities in the region of the sella turcica, 9 had complete ossification of the interclinoid ligaments, and in 3 of these the sella was certainly smaller than usual; 2 patients had fainter shadows indicating a slighter and incomplete degree of the same condition; 3 had such prominent overhanging posterior clinoid processes that they nearly made contact with the anterior, but a small gap definitely intervened; 3 showed marked bone absorption in the dorsum sellæ, and in 2 of these the sella seemed somewhat enlarged, but not sufficiently so to warrant a diagnosis of pituitary tumour.

In the cases in which the size of the sella turcica is not specifically mentioned it appeared normal.

In the first three patients the ordinary lateral views of the skull (see Figure) gave the impression

Lateral view. Gives the impression of complete "roofing" of the sella.

that the sella turcica was completely roofed by bone and I formed the simple hypothesis that in the normal woman increased functional activity led to a certain amount of swelling of the anterior lobe of the pituitary just before or at the time of menstruation and that in cases in which this swelling was restricted by abnormal calcification in the roof of the sella turcica, headache from local tension might be expected.

My colleague, Dr. C. G. Teall, to whom I am greatly indebted, by subsequent study of these radiograms and of others taken later in this investigation, showed that this simple explanation was untenable for, from stereoscopic films and from pictures taken in an anteroposterior plane at such an angle as to reveal the roof of the sella turcica against the background of the foramen magnum, he was able to show that even the most extreme degree of calcification as judged from the lateral view was limited entirely to the interclinoid ligaments and that the actual roof of the sella was unaffected. In addition I later had eight cases indistinguishable clinically from this group who yet had no demonstrable radiological abnormality.

Unfortunately, radiograms of this region are difficult to reproduce, and for the purpose of this paper I have been content with one showing, admittedly, an extreme degree of "bridging" of the sella turcica.

Normal Anatomy of the Sella Turcica

In the circumstances I decided to pay some attention to the normal anatomy of the sella turcica as revealed in the post-mortem room, with particular regard to the condition of the diaphragma sellæ. Of the latter structure, in the most recent anatomical text-book [3] that I have been able to consult I found the following description which is typical of many: "this fold almost completely roofs in the (pituitary) fossa, leaving only a small central aperture through which the infundibulum passes." This description is entirely misleading. In the great majority of cases the diaphragma sellæ does not exist as a diaphragm at all, and is represented by dura mater in crescentic folds of variable size stretched between the clinoid processes; only very rarely can it truly be said that it almost completely roofs in the pituitary fossa. In the ordinary post-mortem examination as the brain is removed the upper surface of the anterior lobe of the pituitary is immediately visible from above (with no covering of dura mater), and during life it has obviously been free to expand upwards.

With this observation in view it seems to me probable that in individuals in whom ossification between the clinoid processes exists, the membranous covering of the sella turcica may be more complete than in others in whom there is the normal interclinoid gap, and such people would in consequence be particularly liable to suffer from the results of local increased tension in the pituitary fossa if it should arise. It is conceivable, too, that the complete membranous diaphragm of the anatomical text-books may exist without any abnormal ossification and if that be granted the conception provides an explanation of the cases in this series which have no demonstrable radiological abnormality.

Interclinoid ossification is a not uncommon variation from the normal and is well known to anatomists. I have been unable, however, to obtain any information on the possible correlation between this ossification and the degree of development of the diaphragma sellæ, but one of my cases suggests that it may be close.

CASE 4.—(This case is not included in the record of patients treated.) First seen in January, 1929. A man of 38, with a history extending over many years of intense intermittent headaches. Physical examination was negative, but his general appearance and development was mildly suggestive of the Frohlich syndrome; he was, however, the father of three healthy children. Vomiting and intense nausea accompanied the headaches, but there were no visual symptoms. I regarded him as a case of migraine and he saw me at intervals as an out-patient. No treatment relieved him and his headaches steadily became worse and more frequent. In January, 1932, he had become desperate as he was almost incapable of work and, as he expressed it, passed from one headache to another. A radiogram of the skull at this time showed complete ossification of the interclinoid ligaments. Treatment with ovarian extract, anterior pituitary extract, and the ordinary sedatives brought no relief, and he pleaded for some operative interference. Rather reluctantly I took him into hospital and as his suffering was so intense, even while at rest, I asked my colleague, Mr. F. A. R. Stammers to explore the pituitary region. The interclinoid ligaments were found to be densely ossified. One anterior clinoid process was removed and a firm diaphragma sellæ was incised. Most unfortunately the frontal sinus was opened in making the bone flap, and two days after the operation he developed signs of septic meningitis, of which he died. At the post-mortem the presence of the ossification of the interclinoid ligaments was confirmed and the diaphragma sellæ was found to be unusually well developed; in the normal state it must have formed almost a complete roof to the sella.

Treatment and its Results

All these cases were treated with injections of the ovarian follicular hormone. There is a considerable amount of experimental evidence [4] in animals, which need not be quoted here at length, that the administration of this hormone causes a diminution in the size and activity of the pituitary body.

In the early stage of the investigation œstrin was used; this substance caused painful local reactions and recently the improved product theelin has been administered in place of it. Theelin causes pain locally for two or three minutes after injection. Two patients considered that œstrin was more efficient in relieving headache than theelin, but the majority noticed no difference in this respect. One case, a ward sister and a very reliable witness, stated that theelin gave rise to unpleasant nightmares which did not occur when another preparation, progynon, was used instead.

In cases in which the headache was limited to the time of the period three injections of theelin 1 c.cm. (50 rat units each) were given in the week before it was due, but when headaches occurred at irregular intervals as well as at menstruation two or three injections of 50 units were given regularly each week. The results of the treatment are summarised in the Table. No case is included that has not passed through

TABLE SHOWING RESULTS OF TREATMENT

Radiological Changes in Sella Turcica

—	Cases.	(a) Complete calcification of interclinoid ligaments.	(b) Partial calcification of interclinoid ligaments.	(c) Prominent posterior clinoid processes.	(d) Absorption of dorum sellæ.	(e) None.
1. Complete relief of headache ..	10	7	2	1	0	0
2. Marked improvement	6	1	0	1	0	4
3. Slighter improvement	5	0	0	1	0	4
4. No apparent effect ..	4	1	0	0	3	0
	25	9	2	3	3	8

two periods since beginning the treatment—the majority have been under observation for over six months. The patients classified as "markedly improved" have been able to do their ordinary work during the whole of the period, though they have not been entirely freed from headache; previously they were completely prostrate for at least one whole day and generally for two. In this group the nausea and retching was entirely relieved. No case received any other form of treatment and no sedatives were prescribed. The possibility that suggestion might be responsible for improvement was not neglected. In Case 1, as already described, elaborate steps were taken to exclude it, and in eight other instances evidence on this point was obtained in a curious way. It seemed probable that any temporary enlargement of the anterior pituitary would be restrained by injecting an extract of the gland itself, and for this reason eight patients were given a proprietary preparation of anterior pituitary hypodermically instead of the usual ovarian extract; some were told that a superior injection had been discovered and others were left in ignorance of the change in treatment. It is a striking fact that, with one exception, all these patients reported that the headaches had recurred.

It is now known that the proprietary preparation in question contained no active principle at all, and it has recently been replaced by another which is under investigation. The patient who reported continued freedom from the headache had had treatment with the ovarian hormone for six months previously, and has remained free from headache during two later periods without any treatment at all.

Whether or not these cases will require permanent treatment with the ovarian hormone during their menstrual life or whether a balance can be established which may make further treatment unnecessary time alone can show. Experience with Case 1 and with the one just described suggests that continued treatment may not be needed.

I have found no reference in the literature to the treatment of headaches of this type by the ovarian hormone, but it may be of some significance that Dodds and Robertson,[5] in their report of the results of the treatment of amenorrhœa with it, state that 90 per cent. of their cases reported "marked improvement in general health and spirits"; as there was no convenient way of measuring this change these authors did not pay much attention to it—but it would be interesting to know if relief from headache contributed in any way to the improvement of the spirits of their patients.

In three cases in my series it was found that the injections of ovarian extract caused mild pelvic pain and accelerated the onset of the period by two or three days; in several, particularly in those in whom it previously had been scanty, the menstrual loss was increased.

More recent work suggests that in some cases these headaches, particularly when they occur towards the end of prolonged and rather profuse periods, may be relieved by injections of extracts of the corpus luteum; I have two cases in which this has occurred after the follicular hormone has failed. The relation of this result to Zondek's opinion that the pituitary hormones influencing the ovary are physiologically distinct is worth investigation.

Discussion

The close relation between the activities of the ovary and the anterior part of the pituitary body has been proved beyond all doubt by the work of Aschheim and Zondek,[6] Evans and Simpson,[7] Smith and Engle,[8] and of many others. It is established that stimulation of the ovarian follicles, ovulation, and corpus luteum formation depend on hormones elaborated by the basophilic cells of the anterior pituitary, though it is not yet decided whether more than one secretion is essential to these processes. Consideration of the clinical history of the patients described in this paper suggested that the anterior pituitary might also determine the function of menstruation in women, and the work of Hartman, Firor, and Geiling [9] appears to provide almost conclusive evidence (so far as it can be obtained by animal experiment) that this is so. Briefly these authors have shown that (1) injections of the ovarian follicular hormone will cause menstrual bleeding in intact immature monkeys, and (2) the menstrual bleeding caused in this way is abolished by removal of the pituitary, and may subsequently be restored either by injection of anterior lobe extracts or implants of the fresh gland.

Hartman, Firor, and Geiling believe that this activity of the pituitary is associated with a hormone distinct from those necessary for ovulation and corpus luteum formation. It is, perhaps, of some interest to say that I was quite unaware of this important work by Hartman and his colleagues when I began this investigation; I read their paper for the first time only a few weeks ago, and it seems to me that my series of cases affords confirmation of the results that they have obtained experimentally.

The suggestion that some anatomical peculiarity in the sella turcica may be responsible for intermittent headaches of the type of migraine is not a new one. Pardee,[10] in 1919, described a series of seven patients with severe bitemporal headaches associated with demonstrable abnormalities in radiograms of the sella turcica, in which the symptoms were stated to be considerably relieved by administration of Armour's pituitary extract by the mouth. Two of his cases had clinical histories indistinguishable from that of my series—both had slightly enlarged sellæ with erosion of the posterior clinoid processes. Three other cases from the description were instances of mild acromegaly. In three cases (one an acromegalic) he found interclinoid ossification of the type described in this series associated with paroxysmal headache. Timme,[11] of New York, in the course of the discussion on migraine at the annual meeting of the British Medical Association at Nottingham in 1926, expressed the opinion that a very large number of migrainous headaches were due to this cause. In his view the visual symptoms, including the occasional ophthalmoplegia of classical migraine, were due to the close anatomical relation of the pituitary body to the cavernous sinus laterally on either side with its contained cranial nerves—the third, fourth, ophthalmic division of the fifth and sixth; he believes that swelling of the gland by impinging on these structures may cause the headache with its optic and visual symptoms, and he stated that radiography of the skull in cases of migraine invariably showed recognisable changes in the sella turcica—erosion either of the anterior or of the posterior clinoids, usually the latter—evidence of enlargement of the cavity itself, and occasionally even a complete break through the cavity walls into the sphenoidal sinus or into the general cranial cavity itself.

With regard to the visual symptoms of classical migraine, the general opinion of English neurologists appears to be that it is almost impossible to believe that such elaborate symptoms can result from pressure on peripheral nerves. J. Herbert Fisher,[12] however, from ophthalmological studies thinks it is conceivable that the lowly organised visual spectra could be produced by irritation of the visual nerve-fibres at the base of the brain and that implication of them at the chiasma would explain the expanding central scotoma or the bitemporal scotoma. As an alternative hypothesis, Fisher makes the suggestion that pressure of a swollen pituitary on the carotid artery in the cavernous sinus may induce distal spasm of vessels in the cerebral cortex, and that this spasm might cause all the phenomena of migraine.

If the headaches of the patients in my series are, in fact, due to increased intrasellar pressure as I have suggested, their histories lend no support to the views put forward by Timme, for the visual symptoms of classical migraine were invariably absent. Again, the pituitary hypothesis for all cases of migraine does not account for the rare but indisputable instances of aphasia, unless Fisher's theory of spasm of cortical vessels induced by pressure on the carotid accounts for them.

The fact that it was possible to demonstrate radiological abnormalities in the sella turcica in 17 cases of my series of 25 women complaining of intermittent headaches, which were particularly severe at menstruation, does not of itself warrant the conclusion

that the symptom was due to local tension in the pituitary fossa, for it is conceivable that the abnormalities are nothing more than a mere coincidence, though the relatively high proportion of cases with well-marked radiographic changes would render such coincidence remarkable. There are, however, several other points which suggest a close connexion between disturbance of the pituitary by anatomical peculiarity and the occurrence of headaches of this type.

In the first place, Dr. Teall, with very extensive opportunity for the examination of radiograms of the skull, has sought for comparable changes persistently during the last six months at the General Hospital, and has so far failed to find a single case. It is impossible to deny, however, that calcification of the interclinoid ligaments may exist without symptoms; the history of two of my cases, indeed, shows that it may be entirely latent.

CASE 5.—In 1925, when aged 33, the patient had a myomectomy for fibroids by my colleague, Prof. Beckwith Whitehouse. The ovaries were left intact. The normal 28-day rhythm of menstruation was not disturbed by the operation and the amount of loss remained normal. Ever since the operation this patient has suffered intense headache at the period from which only partial relief was obtained by venesection. Prior to the operation she had been free from such headaches.

In January, 1932, radiography showed complete interclinoid calcification, and the headaches have since been prevented entirely by the administration of the ovarian hormone in the manner described in this paper.

CASE 6.—A young woman—a patient of Dr. Clyde McKenzie, of Smethwick—had a partial oöphorectomy in 1931. Subsequently she developed severe menstrual headaches. Radiography early in 1932 showed interclinoid calcification. The headaches were relieved by the ovarian hormone.

In both these cases it is reasonable to believe that the operations interfered grossly with the normal mechanism of menstruation and so rendered necessary some increased activity of the anterior pituitary, and that in these women the anatomy of the sella turcica was such that the increased activity of the pituitary resulted in local tension and the production of headache. It is probable that if in these cases the sella turcica had been normal no headaches would have developed, for similar operations are very common and headache is an unusual sequel of them.

The possibility therefore that cases may be found that show radiological changes of the type described and nevertheless have no symptoms of headache does not negative the hypothesis put forward in this paper, for the history of the two patients just outlined shows that symptoms may develop later.

I have already drawn attention to the cases with no radiological abnormality which are clinically indistinguishable from those with well-marked X ray changes; some of them have been relieved by treatment with the ovarian hormone, and, as pointed out earlier, it is conceivable that an unusually dense membrane may roof in the sella and give no abnormal shadow in the radiogram.

INHERITANCE OF ABNORMALITIES OF THE SELLA TURCICA

Inheritance of a tendency to intermittent headaches is common, but only four cases in this series stated that their mothers had suffered previously in a similar way with headaches which had ceased soon after the menopause. In view of the interesting sequel, the notes of one of these cases are included as I took them at the consultation.

CASE 7.—Mrs. D. Sent by Dr. H. M. O'Brien of King's Norton. Aged 30. At the age of 17 had an attack of intense headache at school, associated with vomiting and diarrhœa. Headache subsequently recurred with great regularity in association with menstruation, usually towards the end of the period, which often lasted six or seven days, although the loss was not profuse. The headache was frontal with throbbing between the temples and laid her completely prostrate. Vomiting occurred within a few hours of the onset of the headache and sometimes relieved it, but not invariably. The diarrhœa present on the first occasion recurred three times, but never subsequently. The rhythm of menstruation was regular and usually at a 28-day interval, until last year, when it became scanty and ceased entirely. Since the cessation of menstruation the headache has been practically continuous—she is wasting considerably on too much dieting and with frequent vomiting. Appendicectomy six years ago without relief of any of the symptoms. X ray of the alimentary tract two years ago completely negative. Physical examination negative. Blood pressure 130/80.

Family history: mother had migraine in association with menstruation. Headache ceased in the mother about two years ago, some three years after the menopause. A sister has similar headaches, and a brother is subject to migraine.

A radiogram by Dr. Teall showed definite approximation of the clinoid processes. Treatment with ovarian hormone relieved the headaches, but has not so far restored menstruation.

The mother of this patient was good enough to allow Dr. Teall to radiograph her skull, and the interclinoid ligaments were found to be completely calcified. It is difficult to attribute to coincidence, the occurrence of similar anatomical abnormalities in this region in the case of a mother and daughter who both suffered from headaches of the type described, particularly as a further instance of direct inheritance of calcification of the interclinoid ligaments with a tendency to intermittent headache has recently come to my notice.

THE OCCURRENCE OF INTERMITTENT HEADACHES IN CASES OF PITUITARY TUMOUR

It is generally recognised that the severity of headache in cases of pituitary tumour is variable. Mr. W. R. Henderson, of Edinburgh, told me that while he was working with Cushing in America, it had been noticed that headache was very liable to occur in patients with acromegaly, in association with dense ossification round the sella turcica, even in the absence of gross signs of pituitary tumour; whereas in the chromophobe tumours, without dense ossification, although there was considerable expansion of the pituitary fossa, headache was less common. The inference may fairly be drawn that the severity of headache is proportional to the degree of local tension in the pituitary fossa, and in further support of this may be quoted those cases of acromegaly with pituitary tumour in which the patients suffer intense headache in the early stages, while the tumour is confined to the sella turcica, but are relieved of it when the tumour erodes its way through the dorsum sellæ with consequent reduction of the local tension. Dr. C. P. Symonds recently demonstrated a case of this type at Guy's Hospital.

On investigating the histories of some cases of pituitary tumour in the General Hospital, I was surprised to find two which showed that there had been a long history of menstrual headache before the development of local pituitary symptoms. One of these histories is given here practically in the words of the dresser who took the case.

CASE 8.—Mrs. E., aged 44, admitted to the General Hospital, Birmingham, under Mr. F. A. R. Stammers, on Sept. 28th, 1931. The patient complained of defective vision of two months' duration, and headaches "all her life." She stated that she had suffered from headaches since her teens; they were severe and located at the back of the head in the occipital region; they always accompanied and were definitely related to menstruation, occurring usually towards the end of the period, on the third or fourth days, but never before the periods.

Menstruation began at the age of 14; it always had a 28-day rhythm and usually lasted 3–4 days with a normal loss. Twenty years ago (1912) the patient married at the age of 24; her periods remained regular, but lasted a little longer, 4–5 days. In 1914 she became pregnant and she states that the severity and frequency of the headaches diminished during this period of amenorrhœa, though they did not disappear. In 1920 she was again pregnant and noticed a similar improvement in the headaches.

Since 1925, when she was 38, the patient has not menstruated; the onset of this persistent amenorrhœa was unaccompanied by any menopausal symptoms. After 1925 the headaches recurred at fairly regular intervals of about a month; for a year prior to admission they had diminished in severity. Examination showed that she had a pituitary tumour which Mr. Stammers removed successfully.

Summary

1. A description is given of 25 cases of intermittent headache lacking the visual symptoms of classical migraine and occurring particularly at menstruation; in 17 of these cases well-marked abnormalities in the sella turcica were demonstrated radiologically.

2. The most frequent radiological abnormality was ossification of the interclinoid ligaments (complete in nine cases, incomplete in two).

3. The usual anatomical description of the diaphragma sellæ as "a fold that almost completely roofs in the sella turcica" is incorrect. Normally the diaphragma sellæ is so incomplete that moderate swelling of the pituitary can occur without inducing intrasellar tension. It is suggested that where interclinoid ossification exists the diaphragma sellæ may be unusually well developed, and so predispose an individual to intrasellar tension; a case in a man is described in support of this view.

4. It is suggested that in this series the paroxysmal headache was due to the development of local tension in the sella turcica, particularly at the time of menstruation. Evidence in support of this view is to be found in: (*a*) the recent experimental work in monkeys which shows that menstrual bleeding depends on the activity of the anterior part of the pituitary body; (*b*) the occurrence of menstrual headaches for many years in two women who subsequently developed tumours of the pituitary body; (*c*) two instances of direct inheritance of interclinoid ossification and a tendency to menstrual headache; (*d*) the failure to demonstrate similar radiological abnormalities in individuals who do not complain of headaches; (*e*) the improvement of the headaches in a fair proportion of the cases following the administration of the ovarian follicular hormone which in animals has been shown to reduce the size of the pituitary body.

I wish to acknowledge the great help that I have received in this study from my radiological colleagues, Dr. Harold Black and Dr. C. G. Teall, and also from Mr. G. Hardman, one of my clinical clerks, who was indefatigable in his perusal of a literature which is almost overwhelming in extent.

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THE CHEMICAL IDENTIFICATION OF VITAMIN C

CONFIRMATION OF ACTIVITY OF A PREPARATION OF HEXURONIC ACID

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WHEN Szent-Györgyi [1] first isolated hexuronic acid in 1928, he concluded that it was identical with the reducing substance which is found in active vitamin C concentrates. The reducing substance, however, was thought by Zilva not to be identical with vitamin C. But recently Szent-Györgyi [2 3] has reported that hexuronic acid will protect guinea-pigs from scurvy (in doses of 1 mg. per day fed over the usual 90 days' test period), and he has concluded that "vitamin C is a single substance identical with hexuronic acid." This conclusion has been criticised by Zilva.[4] Independently of Szent-Györgyi, King and Waugh [5] have stated that a crystalline preparation of vitamin C which they have isolated from lemon juice has the chemical and physical properties of Szent-Györgyi's hexuronic acid.

Prof. Szent-Györgyi was kind enough to send a specimen of hexuronic acid (derived from suprarenal glands) to this laboratory for biological test, in addition to one which he submitted to Dr. Zilva at the Lister Institute. Dr. Zilva's report has just appeared.[6] It states that while he had not enough material available for the usual 90-day preventive test, a daily dose of 1 mg. (other levels were not tested) kept scurvy from developing over a period of 55 days—even though the animals lost weight slightly (not from scurvy) during the last 15 days. Zilva concludes that the preparation contains vitamin C, but that the identity of hexuronic acid with the vitamin is not proved. Our own tests, concluded some weeks back, were carried out by quite different methods from the one used by Zilva, and, in addition, give some measurement of the approximate degree of activity of the hexuronic acid, and are now published at the request of Prof. Szent-Györgyi.

EXPERIMENTS WITH HEXURONIC ACID

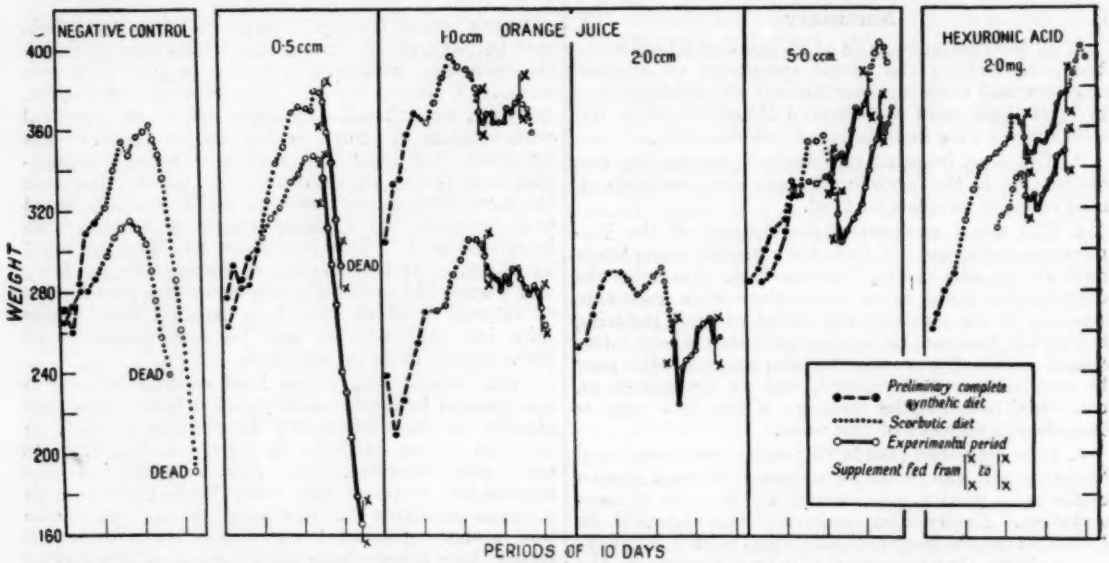
The quantity of hexuronic acid at our disposal was so small (insufficient was available in our case for even the most curtailed test by the usual preventive method) that it was necessary to make use of methods which would give an indication of the activity with the most sparing use of the material. We chose two methods of test. The first, determination of the preventive action on microscopic structure of the teeth (based on Höjer's work), has been used satisfactorily in this laboratory since 1929. The second, a "recovery" test on scorbutic guinea-pigs, has been found in the course of two years' experience to give striking and quite unmistakable results, and needs only the smallest consumption of the material under test.

For the *tooth method*, graded doses of 0·5, 1, and 2 mg. per day of the hexuronic acid were fed in addition to a scorbutic basal diet (for composition, see below) to a series of normal young guinea-pigs of about 300 g. in weight, in duplicate. Reference animals received daily doses of 0, 0·5, 1, 2, and 5 c.cm. of orange juice, also in duplicate. After 11 days the animals were killed, cross-sections of the roots of the incisors made by the usual

method, and the effect of the supplements on the preservation of normal structure determined, comparison being instituted between the appearance of the teeth in the hexuronic acid and the reference (orange juice) groups.

While, of course, a precise assay would have necessitated a larger group of animals (from which we were precluded by the small amount of material available), the results of the tooth test showed quite definitely that 2 mg. of the hexuronic acid gave complete protection, 1 mg. practically complete protection, and 0·5 mg. only partial protection; 1 mg. of hexuronic acid roughly corresponded in potency with 1 c.cm. of orange juice, and 2 mg. were slightly

Graded daily doses of the antiscorbutic supplement are then fed, and the recovery rates noted. A series of graded doses of orange juice (standard) is fed at the same time to another set of animals.* Negative controls are also taken and permitted to stay on the scorbutic diet, to demonstrate that in a given batch or litter the animals are behaving regularly, and would, in fact, continue to lose weight rapidly and die from scurvy but for the addition of the antiscorbutic supplement. After a day or two, growth is resumed at full rate, provided adequacy of vitamin C has been allowed. With partial adequacy subnormal growth results (see Figure), or the decline in weight is merely stayed. The minimum daily dose of the supplement needed to cause a given resumption in growth rate is thus determined, and a given dose of the unknown can be compared with the quantity of orange juice needed to produce an identical effect.



Growth curves of guinea-pigs showing cure of scurvy with doses of 2 mg. of hexuronic acid daily. (Weight in grammes.)

superior to 2 c.cm. of orange juice. The numbers in the Table are given to correspond with those used

Substance and daily dose.	Degree of protection (Key and Elphick's scale).
Hexuronic acid, 0·5 mg.	1, 2
" " 1 mg.	3, 4
" " 2 mg.	4, 4
Orange juice, 0 c.cm.	1, 1
" " 0·5 c.cm.	1, 2
" " 1 c.cm.	3, 4
" " 2 c.cm.	3, 4
" " 5 c.cm.	4, 4

by Key and Elphick [7] to represent the varying degrees of protection; in reality there was a rather better demarcation between the different groups than is apparent from the numbering shown—i.e., a definite difference may sometimes be detected between two degrees of protection when both would be represented by the same form number.

In our "*recovery*" *method*, matched male guinea-pigs of about 250 g. are placed first for a preliminary period of about 10 days on the scorbutic basal diet supplemented with 15 g. per day of cabbage, and then on the basal diet alone (bran 80 parts, oats 720, egg-yolk 40, salts 8·4, cod-liver oil 1 per cent.). Within a further period of two to three weeks animals are chosen for test which are showing early symptoms of scurvy, and have begun to lose weight evenly and have dropped sharply 10 to 20 g. from their maximal weights (in the course of about three days) (see Figure). Any animals whose weight curves have been lacking in smoothness or who have shown a departure from the average normal response are discarded, as also are those giving indications of scurvy complicated by infection (a not infrequent occurrence).

With a little experience the method is found to work most satisfactorily and conveniently. The demonstration of antiscorbutic activity is dramatic and unequivocal. Further advantages are that the method is economical of material, and it is of course far more rapid than the usual preventive method, since, assuming a continual supply of guinea-pigs developing scurvy, a test can safely be concluded within as short a period as ten days. Practically the only precaution is to make no use of animals which have declined too far, and would therefore fail to respond. One should of course omit from consideration animals which develop intercurrent infection or other complication to the scurvy, which likewise prevent a normal response.

We had in hand only enough material for three curative tests, but as to the conclusive nature of the result there can be no possible doubt. One animal we used for two successive tests; during the first curative period he broke his leg, and as a result showed for a time a somewhat diminished response, but this did not prevent a typical recovery in the second test. Only the second test is shown in the Figure. The results indicate that hexuronic acid at a level of 2 mg. had a curative effect equal or slightly greater than 2 c.cm. of orange juice, but less than 5 c.cm. of orange juice.†

The foregoing experiments confirm the antiscorbutic activity of the specimen of hexuronic acid

* Like Key and Elphick,[5] we have found orange juice preferable as a standard of reference to lemon juice (the international standard).

† As presumably some loss of activity had occurred during the process of isolation, and possibly also during subsequent storage (the specimen was not a new one), it is probable that the values obtained for antiscorbutic potency are *minimal* figures.

in question. They throw no light on the question whether the activity is due to the hexuronic acid itself or, as is contended by Zilva, to some contaminating substance. In support of the conclusion that hexuronic acid itself is the vitamin, King brings forward the observation that in the final stages of separation of his vitamin C concentrates an approximate constancy of composition and of antiscorbutic activity were reached. Further evidence as follows, consistent with the view (although by no means conclusive) that the vitamin is identical with hexuronic acid, has recently been obtained in this laboratory in the preliminary stages of an investigation by one of us (L. J. H.) in collaboration with Mr. S. N. Ray, a detailed account of which will be published later. The theory that the vitamin and hexuronic acid are one and the same substance demands that the raw suprarenal cortex should possess exceptionally powerful antiscorbutic potency, the organ being an even richer source of hexuronic acid than is orange juice. This we have determined to be the case, the degree of activity of the cortex being proportional, roughly at least, to its high content of hexuronic acid.

Summary

The antiscorbutic action of a preparation of hexuronic acid from suprarenals has been confirmed by means of a striking curative test and by the tooth-structure method. 1 mg. of the hexuronic acid (an old specimen) was found to have an activity somewhat greater than 1 c.cm. of orange juice.

Preliminary experiments have established the high antiscorbutic activity of raw suprarenal cortex, roughly proportional to its high hexuronic acid content.

Addendum

NEGATIVE EXPERIENCES WITH NARCOTINE DERIVATIVES

Experiments carried out in this laboratory,[8] in advance of the work described above, had failed to confirm the claim recently advanced by Rygh,[10] and apparently accepted in many quarters,[9] as to the identity with vitamin C of certain narcotine derivatives, methylnornarcotine, or irradiated narcotine.

In preparing these substances we followed the procedure described by Rygh as closely as possible. The vitamin C activity was tested (1) by the preventive method against scurvy in guinea-pigs; (2) by the microscopic tooth-structure method. The irradiated narcotine was tested at five levels—viz., 10, 1, 0·1, 0·01, and 0·001 mg. per guinea-pig per day—six animals being used at each level. Similar tests were done on the methylnornarcotine. A second specimen of irradiated narcotine, kindly prepared for us by British Drug Houses, was tested at the 1 mg. level only. It was found that the incidence and development of scurvy were not affected by the narcotine derivatives, and the test animals died at the same time as the negative controls and with an equally severe degree of scurvy. The tooth method gave equally negative results—except for one anomalous result, that three animals receiving 10 mg. of methylnornarcotine showed considerably less severe tooth lesions after 10 days than the negative controls; little significance need be attached, however, to this irregularity, in view of the fact that after 18 days tooth lesions were now as severe as in the negative controls (no degree of protection), and that the survival period of animals receiving the same supplement was not increased.

On studying Rygh's account of his work a number of serious objections to his conclusions are apparent, as follows. The animals receiving his alleged active preparations survived no longer than the negative controls. Death, he supposed, was due to deficiency not of vitamin C but of some additional unspecified factor absent from his basal diet. The method he used for diagnosing scurvy had some unusual features, however ("looseness of teeth," "condition of suprarenals and intestines"), and the alleged inadequacy of the basal diet is hard to reconcile with the satisfactory results obtained by other workers on similar diets supplemented only with minute amounts of active concentrates (see present paper, for example). The improved results he obtained with addition of boiled orange juice were probably due simply to the presence in it of unchanged vitamin C. Particularly unsatisfying is Rygh's finding that the alleged active material, if fed in quite moderate excess of the supposed optimal level, again produces the same symptoms as the vitamin deficiency itself. His contention that sunlight protects animals from scurvy and synthesises the vitamin in the plant (deriving it as he supposes from narcotine) is negatived by earlier work,[10] as well as by the observation that scurvy has been rife in the tropics among people exposed to the sun.

Zilva [12] has already reported that he was unable to find any antiscorbutic activity for two hydrolysis products derived from narcotine; his negative conclusion is strengthened by our results obtained on materials prepared under the actual conditions described by Rygh.

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SULPHUR THERAPY IN THE PSYCHOSES

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In 1929 Schroeder [1] first published a paper dealing with the treatment of cases of general paresis by means of injections of Sulfosin, a medicament composed of sulphur in oil; and in the same paper he advocated the use of this substance in dementia præcox. Since then, several papers [2] have appeared describing the results of this treatment. The usual practice has been to give one course of ten injections; but, with a view to giving the treatment a thorough trial, several courses were given in the present investigation. In the group of 45 cases dealt with, three or four such courses were given in 42 of the cases. The interval between each course was three weeks. In the remaining 3 cases, recovery from the psychosis resulted after one course, rendering further treatment unnecessary.

The 45 cases treated comprised 21 advanced and 13 early schizophrenics, 5 involutional melancholics, and 6 manic-depressives.

Sulfosin Leo, Collosol sulphur, and 1 per cent. sulphur in oil were used, but no appreciable difference

was found in the results obtained from the three preparations.

The technique followed as regards the actual injection was the same as that originally recommended by Schroeder—viz., alternate injections on the lateral side of each thigh supraperiosteally, between the upper and middle thirds of the femur. Injections were given on alternate days. It was found that the temperature could not be regulated by the amount of the drug given, and instead of increasing doses from 1 to 10 c.cm., it was considered more convenient to give a preliminary injection of 1 c.cm. followed by nine of 5 c.cm. The practice of taking half-hourly temperatures during the pyrexial period, as recommended by previous writers, was found unnecessary, an hourly chart giving all the essential information. In an endeavour to ascertain the effects of the sulphur on the bodily mechanism, sugar-tolerance tests and blood counts were done before and after each course of treatment; and a differential count was made at hourly intervals during the pyrexia.

CLINICAL RESULTS OF TREATMENT

It is not proposed to give the results of the investigations in detail, for, while in individual cases points of interest arose, no factor of universal application emerged. The temperatures obtained ranged from 100° F. to 105° F., the average being 102° F. to 103° F. In no case did the pulse or respiration rate suggest any circulatory or respiratory disturbance. An appreciable loss of weight up to 16 lb. resulted in the majority of cases, but in some an actual increase resulted. Although the patients all looked pale and debilitated after treatment, in no case was there any marked fall in the red blood-cells. Sugar-tolerance tests gave quite inconsistent results, the hyperglycæmic index,[3] which is an index of the sustained hyperglycæmia found in many psychotic subjects, rising in some and falling in others following treatment. A leucocytosis of greater or less degree was found in all cases, the highest figures reached being 73,000 cells per c.mm., while the average was from 20,000 to 30,000. A superficial study of the leucocytosis suggested that the greatest improvement was obtained in those cases in which leucocytosis was most marked, but the parallelism was not at all convincing.

Quite a number of the patients complained of pain at the site of injection, but in no case did any abscess develop. Prolonged baths were found useful in a few cases where stiffness and continued pain resulted from the injections.

USE OF CONTROLS

The chief characteristic of the schizophrenic being his withdrawal from reality, the possibility of intensive personal attention alone resulting in some improvement suggested the advisability of using controls resembling as nearly as possible the patients undergoing the treatment. These controls were put to bed for three weeks, given a special diet, and subjected as far as possible to the same nursing attentions as those undergoing the sulphur treatment. In actual fact, the controls did as well as the other patients, but, owing to the difficulty of making a satisfactory comparison, it was decided in subsequent cases to make the patients their own controls by submitting them to the above regimen prior to their sulphur therapy. In this way, it was possible to gauge what improvement, if any, could be credited to the sulphur treatment.

PSYCHIATRIC RESULTS OF TREATMENT

1. *Schizophrenia.*—In the 21 advanced schizophrenics, 17 of whom were females, the disease had been active for periods varying from 18 months to 27 years. In eight of these cases (i.e., 38 per cent.) some improvement resulted, in that faulty, impulsive, destructive, degraded habits improved, and an increased interest in reality was noticeable—e.g., one patient who had not looked at a paper for years began to read the daily paper; a mute patient began to speak. It was soon apparent, however, that the improvement was quite temporary unless special efforts were made to maintain contact with reality, and here occupational therapy proved most valuable.

The final result of the combined treatment of sulphur and occupational therapy in these 21 advanced schizophrenics is that 15 (i.e., 71 per cent.) are quite unimproved, this including two patients who had shown temporary improvement for a few weeks; five are slightly improved, in that their asocial habits are less pronounced, and they are now capable of evincing some interest in occupational therapy; while one has recovered clinically and been discharged. It is of interest to note, as pointing to the non-specificity of sulphur treatment, that this last patient, a case of dementia paranoides, had a good remission two years ago following an attack of acute appendicitis.

In the case of the 13 early schizophrenics, 12 of whom were females, psychotic symptoms had been present for periods varying from 3 to 12 months. In six of these cases (i.e., 46 per cent.) improvement resulted, but only in one was the improvement sufficient to justify discharge from hospital; and even here recovery was very partial.

2. *Involutional melancholia.*—Five female patients who had been suffering from involutional melancholia for periods varying from 1 to 12 years were submitted to treatment, and in no case did any appreciable benefit result.

3. *Manic-depressive psychosis.*—Six female manic-depressives, comprising one melancholic and five benign stupors, were treated. The melancholic, who had shown symptoms for two years, improved very quickly, and was discharged fully recovered after one course of sulphur. The five cases of benign stupor all recovered, two being discharged after one course. In four of these, recovery appeared to be accelerated by the treatment; but in the fifth it was extremely doubtful whether the sulphur therapy contributed to the patient's recovery.

CONCLUSION

There seems no doubt that sulphur is in no way specific in the treatment of any of the psychoses, but can be regarded as a useful addition to the type of treatment in which the setting up of a periodic pyrexia is the chief feature. It merits a trial in certain early cases of schizophrenia who are not responding to occupational therapy, and seems definitely useful in some advanced schizophrenics exhibiting obnoxious habits, or a temporary exacerbation of their psychosis. It seems to be useful in cutting short attacks of benign stupor. In the only melancholic of the manic-depressive type treated, it terminated an attack which had lasted two years; but in involutional melancholia it was entirely without effect.

Repeated courses cannot be recommended as a routine measure, as no patient who failed to respond to the first course of injections benefited from subsequent courses, and it would appear unjustifiable in cases where occupational therapy is proving beneficial to interrupt this treatment by a further course of sulphur injections.

While it is possible that some beneficial biochemical changes are set up in the organism, there seems to be

little doubt that the benefit which results from the treatment is largely, if not entirely, psychological, the physical illness, with its pain and general discomfort, and the incidental nursing attention interrupting the phantasy life of the patient and forcing reality upon him.

It cannot be too strongly emphasised that occupational therapy should be instituted as early as possible in any case which has responded to the sulphur therapy, so that the new contact with reality may be maintained, and, if possible, increased.

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CLINICAL AND LABORATORY NOTES

POLYNEURITIS ASSOCIATED WITH URTICARIA

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THE following is an account of a young man who had an urticarial rash appearing at recurring intervals on different parts of his body. Shortly after the initial onset he began to feel weak and complained of numbness, loss of power, and swelling of legs. On examination he was found to have a severe polyneuritis, and further investigation into the ætiology of the condition led us to regard both the urticaria and the polyneuritis as anaphylactic. This view of the case coincides with that expressed in an article by Allen[1] dealing with the neurological complications of serum treatment, and the peculiar case of a man who had been treated with serum for scarlet fever. Twelve days later he developed serum-sickness, and a brachial neuritis which persisted for 13 weeks. Allen stressed the rarity of such complications, and mentioned seven examples of polyneuritis from a similar cause which had been described by French and American writers.

A few weeks ago another case was reported by Mackay[2] of angioneurotic œdema with extensor paralysis of the forearm, and atrophy of the affected muscles. The puzzling nature of such cases, their comparative rarity, and the unusual features of our own case which differed from each of the above, has prompted us to report it. The details are as follows :—

Man, aged 21, joiner, single. On admission to hospital on Sept. 7th, 1931, complained of red itchy patches on skin, weakness of arms and legs, with swelling of feet.

Family history.—A brother suffers from asthma; another brother died from scarlet fever.

Previous illnesses.—No previous illness of a similar nature. Influenza 18 months ago.

History of illness.—In June, 1931, was employed as a joiner in repairing floors and woodwork of an old house. Noticed red itchy patches on the forearms and ankles, which lasted a few days and then disappeared, only to recur on some other part of the skin. A few weeks later the legs began to swell after standing, and there was numbness and deadness in the feet and hands, with loss of power.

EXAMINATION

Pulse-rate 114, temperature 99·8. Face somewhat full and puffy but no definite œdema. No enlargement of glands. Well-built and average nutrition; no anæmia. On the back of the right hand there were several red, ring-shaped, raised patches, each about an inch in diameter. On the legs and trunk there were two or three similar patches.

Circulatory.—Blood pressure 124/96. Radial artery not hardened. Area of cardiac dullness not increased and heart sounds normal.

Respiratory.—Chest resonant and breath sounds clear.

Alimentary.—Tongue slightly furred, teeth good, throat healthy. No abdominal tenderness or rigidity; liver and spleen not palpable.

Urine.—Specific gravity 1030, acid. Albumin present, but no sugar or other abnormal constituents.

Nervous system.—Patient is intelligent and unemotional. Reasoning and memory good; right-handed.

Cranial nerves.—Sense of smell normal. Visual acuity 6/6 R. and L. Field of vision full. Fundi: discs normal in appearance and edges well defined; no exudates or hæmorrhages in surrounding retina. Ocular movements full. Pupils react to light and accommodation; equal and central. Consensual response; left greater than right. Left corneal reflex less than right, though both present. Sensation over face good. Other cranial nerves normal.

Motor functions.—Rises easily with arms folded. Hand grips weak, and arms cannot be maintained for long in outstretched position. Cannot extend or dorsiflex foot against resistance. Fibrillation in left thigh. Coördination and muscular tone normal. No atrophy. Gait: walks on a wide base and stamps the ground heavily. On shutting eyes staggers, and would have fallen but for support.

Sensation.—Sense of cotton-wool lost over lower extremities to about 2 inches above patella. Decreased sense of pin-prick over same area. Sense of position of toes deficient. Heat and cold normal. Similar changes in upper extremities, extending from fingers half-way up forearms.

Reflexes.—In upper extremities supinator-jerks present, biceps-jerks and triceps-jerks lost. In lower extremities knee-jerks and ankle-jerks absent. Plantars indefinite flexor, abdominals present and equal. Sphincters controlled.

INVESTIGATION AND TESTS

Subsequent specimens of urine normal. Throat-swab negative for diphtheria. Catheter specimen of urine sterile, no pus. Widal negative for typhoid, paratyphoid A, B, and C, and *Brucella abortus*. No pathogenic organisms in stools. Serum agglutinated type B. enterococcus (1 in 25). No reaction of degeneration on testing muscles of arms and legs. Skin protein tests performed for all groups: negative. Fractional test-meal: normal curve of acidity and rate of emptying of stomach. Temperature records: highest recorded 100° F. Course irregularly intermittent, usually 99° F. A slight elevation of temperature tended to persist on and off until discharge from hospital 17 weeks after admission.

TREATMENT AND PROGRESS

A mixed streptococcal and enterococcal vaccine; intramuscular injections of whole blood; three intramuscular injections of Sulfosin (Leo) with a view to promoting transient hyperpyrexia; Bemax, Radiostoleum, and adrenaline hypodermically.

The urticarial rash was never marked, but usually present somewhere on the skin. The patches became fewer and were noticed at longer intervals as time went on. Neurological examination made a few days before discharge from hospital on Dec. 7th, 1931, showed sensation returning in the hands and feet. The knee-jerks could be obtained sluggishly with reinforcement. Muscular power in the arms and legs had improved, though it was still not normal, but the patient could walk without assistance. At no time was localised muscular wasting observed. After leaving hospital the patient attended as an out-patient at regular intervals. On April 17th, 1932, he had so far recovered as

[1] Allen, I. M.: THE LANCET, 1931, ii., 1128.
[2] Mackay, W.: Ibid., 1932, i., 777.

to inquire whether he might start work. Examination showed no signs of former urticaria. Knee-jerks present on reinforcement, left greater than right. Ankle-jerks absent; plantars absent. Sensation to pin-prick and cotton-wool normal over arms and legs. Muscular power normal.

A period of ten months has elapsed since the onset of the illness with urticarial rash and multiple peripheral neuritis. Recovery was gradual. Sensory changes were more pronounced than muscular weakness. There was no reaction of degeneration or localised wasting of muscle. The legs were affected more than the arms. No cause was discovered for the neuritis other than that it was probably associated with the urticaria, which was likewise of unknown origin.

RETRO-PERITONEAL HERNIA

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Cases of retro-peritoneal hernia are relatively uncommon and usually come under the notice of the surgeon when presenting symptoms of strangulation or obstruction. The following case exhibited features of interest from a diagnostic and developmental point of view.

History.—The patient, a coal-miner aged 38, first came under observation at the end of 1930, when he had an acute attack of abdominal pain, with tenderness over the liver, and a palpable enlarged spleen. He also had some slight enlargement of glands in the axillæ and groins. He was anæmic. He gave a vague history of dyspepsia. He was thought to show evidence of some disturbance of the reticulo-endothelial system, which might possibly be benefited by a splenectomy, and he was sent to a physician for a more accurate diagnosis and advice on this point. He returned with the report that he had a duodenal ulcer, which had improved under medical treatment, and the suggestion that this treatment should be continued. He continued on this régime until at the end of 1931 he returned with a history of further attacks of pain, "bilious" attacks, and still vague dyspepsia. He consented to operation and this was performed at the beginning of the year.

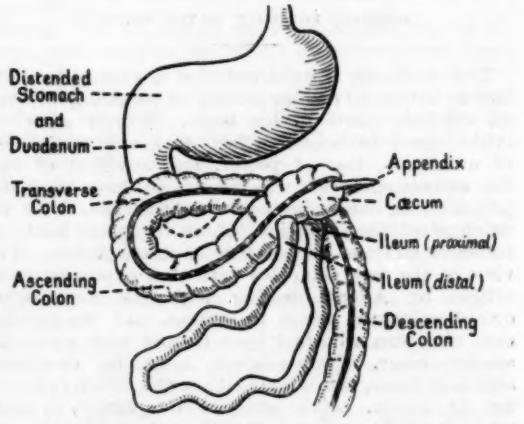
Operation.—The abdomen was opened by a right upper paramedian incision. No ulcer could be discovered in the stomach or duodenum, but both these organs were found to be greatly distended, up to the crossing of the superior mesenteric vessels, the veins of which system were found to be markedly enlarged (up to the size of a normal external iliac vein). The spleen was apparently normal. So far the case was thought to be one of chronic duodenal ileus. On further examination the appendix was found to be missing from its usual situation, as were the cæcum and ascending colon, and it was located in the left hypochondrium near the spleen. The "ascending" colon was suspended on a mesentery and passed from left to right, to turn at an acute angle and return on a posterior plane as the more or less normal transverse colon. Finally the whole of the jejunum, from its first part onwards, and part of the ileum, was found to be herniated into a sac, the mouth of which looked to the left, the fundus extending down towards the right iliac fossa, with the superior mesenteric vessels in its anterior border. This hernia was reduced with some difficulty, the opening, which was quite small, was then closed. The mesenteries of both the ascending and transverse colons were pierced and a gastro-jejunostomy was performed. The appendix was removed.

Since operation the patient has been free from pain. He has had occasional mild attacks of vomiting, controlled by diet, and less frequent though more interesting attacks of diarrhœa of a lienteric type.

Discussion.—The condition of duodenal ileus is stated to be caused by the pressure of the superior mesenteric artery, or occasionally the right colic artery, on the third part of the duodenum. Any condition causing a drag on the mesentery may produce it, such as lack of fixation of the proximal cæcum. In this case it appears to have been caused by the wedge of herniated small intestine between the superior mesenteric artery and the duodenum. It gives rise to a chronic "bilious" dyspepsia and may in time cause peptic ulceration or infection of the biliary or pancreatic passages.

The surgical treatment of this condition is, in the early cases, by performing a suspension operation for the cæcum, and in later cases by duodeno-jejunostomy. The latter procedure was not possible in this case, since the first part of the transverse colon had no mesentery, but was in direct relationship with the duodenum, rendering it inaccessible. Resort had therefore to be made to a gastro-jejunostomy to relieve the obstruction.

Hernia into the fossæ round the end of the duodenum has only been described with any frequency



Arrangement of the abdominal contents. The jejunum is concealed in its sac behind the visible bowel.

in two situations. Firstly, the commonest—over 60 cases having been recorded—into the left duodenal or paraduodenal fossa of Landzert. The mouth of this fossa looks to the right and its fundus extends upwards to the left, towards the spleen. The inferior mesenteric vein and ascending branch of the left colic artery run in the anterior free margin. Secondly, the rarer variety, the right duodenal or parieto-mesenteric fossa of Waldeyer. The mouth of this looks to the left, its fundus extends downwards towards the right iliac fossa. It lies below the transverse portion of the duodenum, the aorta is situated behind, and the superior mesenteric vessels run in its anterior free margin.

As far as the abnormal anatomy will allow, the case under discussion would appear to be a hernia of the latter type.

Springfield Mental Hospital, Tooting.—A new infirmary block has been opened by Mrs. De Salis. It was explained that, in so large a mental hospital, it had been found necessary to provide a new building for the sole purpose of treating the sick. The extra accommodation thus provided will relieve congestion in the main building, and will bring up the total number of beds approximately to 2000, exclusive of the annexe at New Malden. The new block accommodates 168 patients, and there are quarters for a staff of "doubly trained" nurses.

MEDICAL SOCIETIES

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS

DISCUSSIONS AT THE ANNUAL CONFERENCE

THE eighteenth annual conference of this Association was held in the Great Hall of University College, London, from July 21st to 23rd.

Protection of the Young Adult

Sir ARTHUR STANLEY (chairman of council of the Association) was chairman of the Conference, but in his absence Sir ROBERT PHILIP presided over a session on the first day at which a discussion on protection from tuberculosis of the young adult was introduced by Dr. F. J. H. COUTTS (late senior medical officer, Ministry of Health). Dr. Coutts, and later Dr. Noel Bardswell, submitted statistics, supported by charts and tables, proving conclusively that, whereas the death-rate at all ages from pulmonary tuberculosis is falling steadily, since 1900 there has been in the age-group 15 to 25 a slackening in the rate of decline among males, while for females the death-rates for the last two decades have been actually higher than for the first ten years of the present century.

There was some difference of opinion, said Dr. Coutts, on the doctrine of immunity, but he thought the general view was that infection by tuberculosis, if not rapidly fatal, did produce immunity whether the infection was of human or bovine origin. Our success in reducing the total amount of tuberculous infection in the community had resulted in a smaller proportion of the population securing protection in childhood, so that they must face the hazards of adolescence with no acquired immunity. In view of all the available facts Dr. Coutts inclined to the opinion that the recent relative increase of pulmonary tuberculosis in young adults was attributable to a considerable extent to the larger proportion of persons reaching adult age without having acquired infection. If this was true, some form of preventive vaccination to produce immunity was needed. Early diagnosis and treatment were very important, and every effort should be made in the case of adolescent patients to cut out the waiting period and secure admission to a sanatorium at the earliest possible moment.

Dr. NOEL BARDSWELL (principal assistant medical officer, London County Council), commenting especially on the increased incidence of pulmonary tuberculosis among women in the age-group 15 to 25 in London, said that a comparison of census returns for 1911 and 1921 showed that, while the percentage of women occupied did not vary very much, there was a remarkable decrease in the number in domestic service. The change over from what might be called a protected occupation to work in shops and factories might have had some effect, though his experience was that better circumstanced young women, such as clerks, shorthand typists, and shop assistants were as prone to break down with tuberculosis as those in the poorly paid trades. Inquiries into the life-history of young women patients usually elicited such unfavourable features of daily life as fatigue over a long period contributed to by the journey to and from work in overcrowded tubes and buses; want of rest, most commonly due to recreation, but sometimes to evening study or helping in the home; neglected colds; and unsatisfactory meals. The higher death-rate among young women was practically limited to the unmarried, suggesting that there was a protective factor in marriage, perhaps consequent on the advantage gained by removal from the ranks of wage-earners. He attributed the increased incidence of pulmonary tuberculosis among young women to the strain and stress of competitive wage-earning, and the associated changes in their social life as compared with 25 years ago, at a time when physically they were unfitted for it. He did not agree with Dr. Coutts's theory that the higher mortality was due to the failure to acquire infection when young, and his proposal of protection by inoculation. A grave defect in our campaign against tuberculosis was suggested by the idea that we were only saving the very young and the elderly. Should we test our young people, and if they gave a negative result remedy the situation by deliberately putting them in the way of a graduated course of tuberculous infection? Dr. Bardswell could not subscribe to such a thesis. He would rather pin his faith to the value of education, and try to teach the young adult to protect himself.

The discussion was continued on the following day under Sir ARTHUR STANLEY'S presidency.

Dr. JAMES WATT (medical superintendent, King George V. Sanatorium, Godalming) said that, while medical officers of health and bacteriologists tended to concentrate their efforts in fighting tuberculosis on avoidance of infection, clinicians—particularly those working in sanatoriums—were far more impressed with the state of the patients' defences. The facts that no child living in the tuberculosis village settlements at Papworth and Preston Hall had developed tuberculosis, that members of the staffs of sanatoriums living among open cases showed no greater incidence than the general population, and the relative infrequency of conjugal tuberculosis, led to the conclusion that even repeated or continuous dosage was not the cause of the disease. Dr. Watt had formed the opinion that neglect of the simple rules of health was mainly responsible for the tuberculosis of the young adult. In a series of 100 male patients between 15 and 25, undergoing sanatorium treatment for pulmonary tuberculosis, he had found evidence of overcrowding in the homes of 18; 66 had to share a bedroom and 37 a bed with at least one other; 11 admitted to under-nourishment due to unemployment and 34 to keeping unduly late hours. The greatest protection lay in a healthy mode of life, the principal requirements of which were proper feeding, a considerable amount of exposure to the open air, and a proper balance between rest and exercise. The difficulty was to get a young man to follow this healthy way of living—hygienic habits needed to be inculcated during schooldays, so that, as the boy grew into the adolescent and the adolescent into the man, he would automatically do the right thing. Periodic medical X ray examination of the chest would be a protective measure, since changes in the lungs could be detected radiologically when no symptoms or physical signs were apparent.

Dr. D. MELVILLE DUNLOP (department of tuberculosis, University of Edinburgh) thought there was general agreement that the usual cause of pulmonary tuberculosis in the young adult was not a massive exogenous infection causing the allergic immunity of the patient to break down, but rather the bursting into growth of an endogenous infection contracted

long before, as a result of circumstances which caused a failure in resistance. It was desirable that medical undergraduates should be more fully trained in diagnosis of the early manifestations of tubercle. The fact that these patients were removed from the general teaching hospitals meant that, as a rule, students only had experience of examining well-marked pulmonary cases. Dr. Dunlop would like to see a larger proportion of beds kept for children; some of the beds reserved for chronic or incurable cases would be more usefully occupied by young people in an early stage of the disease. He thought a fuller use should be made of open-air schools. An open space with simple shelters to protect the children from exceptional blasts would be a better school than a monumental establishment with elaborate systems of heating and ventilation.

Dr. F. R. G. HEAF (medical superintendent, Colindale Hospital) emphasised the difference between infection and suffering from tuberculosis. The majority of people in this country had been infected by the age of 20, and if, in spite of that, the body remained healthy, probably a certain degree of immunity was established. The young adult therefore started with a balance of resistance, and yet we were faced with a gradual increase in the number of cases suffering from the disease. There was no statistical evidence that the young adult type of phthisis was affected by environment or density of population, but it was common among persons in employment exposed to wind and wet. Occupations with access to food-supplies appeared to have a lower mortality than normal, and the same was true of youths enjoying good wages and food and taking healthy exercise. During the war the mortality from phthisis in adolescence and early adult life rose as the food shortage became pronounced, and fell to normal again as soon as food became plentiful. Dr. Heaf had been impressed by the strenuous and unhygienic way in which leisure hours were spent. In a series of about 200 young adults suffering from pulmonary tuberculosis, there was evidence in a large proportion of cases of late retirement to bed, late rising, little or no breakfast, and a hurried journey to work. Money that should be spent on a good supper was spent on admission to a cinema, indoor games, and cigarettes, while the evening meal was reduced to a snack at a coffee-stall or a fish-shop. Thus the vitality of the body was lowered and resistance reduced to a minimum. To get the young adult to lead a healthy life his own coöperation must be secured. If the youth could be made to take a pride in his physical condition similar to that of an athlete, much might be done to reduce the number of young lives sacrificed through ignorance and intemperance.

Dr. W. A. MACPHAIL (assistant medical superintendent, Burrow Hill Sanatorium Colony) spoke from personal experience of tuberculosis in adolescence. Cases at this period of life were comparatively few, and this had led to an unfortunate tendency to look upon tuberculosis as an unlikely possibility in diagnosis. While tuberculosis was not common at this age, neither was any other disease, and by comparison with the death-rate from all causes at this age, tuberculosis was a most serious disease. Tuberculosis in adolescence frequently assumed a peculiarly symptomless form, and the disease might progress to a considerable degree before it was discovered. Some medical supervision in the early years of adolescence, notably the years between 14 and 16, was most desirable, and these were at present precisely the years for which no such supervision was provided. It was unfortunate that the gap between school medical inspection and National Health Insurance should occur at so vital an age. The early years of adolescence were a challenge to preventive medicine in general and particularly in regard to tuberculosis.

DISCUSSION

A short discussion followed the papers. Dr. P. A. GALPIN (West Ham) thought more attention should be paid to the complete change in circumstances of the school-child and the worker. Home and school were adapted to the life of the child, but factory, office, and tea-shop were not adapted to the life of the young adolescent. It was true that we were a better-fed nation now than 20 years ago, but many individuals were not taking advantage of their opportunities. He had examined a number of children and young adolescents suffering from pulmonary tuberculosis, and in the majority of cases there was a history of refusal to take necessary foods such as milk and especially green vegetables. He was trying to search out these children, not merely for the sake of statistics, but in order to persuade them to take a daily ration of green vegetables in the interest of their health.

Dr. H. C. JENNINGS (M.O.H., Holland, Lincs) spoke as tuberculosis officer of a rural community. The facts about a falling death-rate from pulmonary tuberculosis in all age-groups except 15 to 25 were the same in his district as in towns, but the explanation of many evenings spent at cinemas or dances did not apply. He had been struck by the lack of use of fresh food, and the large extent to which tinned foods were resorted to. A difficulty which had considerable influence was the care of dependants. A young married woman with one or two children was often prevented by fear as to what would happen to her family from presenting herself for examination, or from accepting treatment prescribed for her.

Dr. D. P. MARAIS (South Africa) thought we had gone from the extreme of frightening people by talking of the universality of infection by tuberculosis to the opposite extreme of suggesting that infection was of very little importance; and Dr. J. E. G. JOSEPH (Warrington) uttered a warning lest Dr. Bardswell's statement that marriage was a protective influence should be interpreted as advice to young tuberculous women to marry and have children, whereas it was well known that childbearing had a highly deleterious effect on a tuberculous patient.

Continuity of Care

Miss EDITH MCGAW (hon. sec., Paddington Tuberculosis Dispensary) opened a discussion on the need of continuity of care in tuberculosis by emphasising the inseparability of medical and social work. Both types of care should begin from the moment any member of a family was found to be suffering from tuberculosis, and cease only when every member of the household could be given a clean bill of health. She advocated a routine use of the tuberculin test for purposes of early diagnosis.

Dr. R. S. WALKER (tuberculosis officer, Paddington Tuberculosis Dispensary) said that, apart from examination of contacts, the social side was the first concern of dispensary work. Special care was given to young people between 14 and 16 for whom no statutory medical supervision was provided, and it was often possible to give advice as to suitable work for boys and girls on leaving home. He did not think patients discharged from sanatoriums marked

"damaged beyond repair" should ever be allowed to return to their homes to infect a new generation. The Local Government Act gave power to enforce this in county boroughs, but not in London.

Miss MARX (almoner, Brompton Hospital) urged the necessity for further research on all aspects of tuberculosis. Much more exact information was required on such points as infectivity and immunity, and the only way to obtain it would be by keeping in close touch with tuberculous patients and their families over long periods, and studying all the factors, physical, temperamental, and social.

Dr. S. D. ROWLANDS (tuberculosis officer, Gateshead) gave some account of the work of an after-care committee formed in Gateshead about 18 months ago. As in all Tyneside towns, there was much unemployment and a high incidence of tuberculosis. The greater part of the work for the time being was therefore in the direction of material assistance, including such measures as the loan of bed or bedding to enable a patient to sleep by himself.

Councillor WALTER TAYLOR (Deptford) described handicraft classes being held in about 12 London boroughs for tuberculosis patients passed as fit for light work, while waiting for such work to be provided. The class was purely occupational therapy in the first instance, but in Deptford a small building was erected two years ago, with the help of the National Association for the Prevention of Tuberculosis, to which students could go at any time and carry on with their work. Their goods were sold privately or at special sales, and the small profits given to the students.

Mr. L. SHOETEN SACK (Kent), whose paper was read by Miss Allatt, referred to overcrowding—always bad, but incalculably serious where there was a member of the family suffering from tuberculosis. Housing authorities should be asked to give prior claim to families with a case of tuberculosis whose living conditions were unsatisfactory.—Mrs. L. M. ANDERTON (Walthamstow) said that in Walthamstow 10 per cent. of new houses had been allocated to tuberculous families on the recommendation of the tuberculosis medical officer, supported by the medical officer of health.—Councillor BENFOLD (Durham) mentioned a scheme whereby if a family was ordered by a medical officer to go into a larger house on account of tuberculosis, and it was impossible for them to pay the rent, the local authority could help by paying part of the rent.

Mr. BATEY (clerk to the London Insurance Company) spoke of economic difficulties connected with trade unions and managers of approved societies when a worker was only fit for light or part-time work.—The same point was taken up by Mrs. CONNOR (Croydon), who said that employers were often willing to take an employee for light work for three months, when what was needed was two years. It would be a great help if some plan could be devised by which part wages could be paid and supplemented by national health insurance.

REVIEWS AND NOTICES OF BOOKS

A Radiological Study of the Paranasal Sinuses and Mastoids

By AMÉDÉE GRANGER, M.D., Professor of Radiology, Louisiana State University. London: Henry Kimpton. 1932. Pp. 186. 25s.

FOR the radiological study of the paranasal sinuses, it is of peculiar importance that the positions chosen can be exactly repeated as required. Prof. Granger has realised this, and has devised a simple head-rest consisting of a sheet of bakelite in which has been cut a triangular opening for the reception of the nose. As a result, the head rests on the alveolar process and the glabella, and the angle does not vary as it does when the soft tip of the nose forms one of the points of support, nor is there the same tendency for the head to rotate laterally. The X ray beam is used vertically, and the patient's head placed in one of two positions by means of inclined planes forming angles of 23° and 107° respectively with the forward horizontal line; the head is thus nearly horizontal in the prone position. It is worth noting, however, that many radiologists now attach great importance to the vertical position, which makes it possible to detect a "fluid level." Prof. Granger in this work deals especially with the sphenoidal and ethmoidal sinuses, which in the positions described by him are partly but not entirely superposed.

The second part of the book deals with radiography of the ear and mastoid process, for which the author has devised a "localiser," or head-rest, by means of which the patient's head is supported in a nearly horizontal position with the sagittal plane at an angle of 50° to the horizon, the X ray beam being vertical as before. An advantage is that the patient lies in a comfortable position, a point of importance when he is seriously ill. The position is designed to throw the mastoid nearest the plate clear of extraneous shadows, and the author claims that it is possible to determine whether the various groups of cells, peri-antral, zygomatic, or tip cells, are occluded, and whether the cell walls are broken down, and acoustic tumours have been clearly recognised. The interpretation of radiographs in infants is somewhat peculiar; normally the anterior wall of the lateral sinus groove is not visible in a child under 3 years of age, but becomes so when the bony structure of the mastoid has been destroyed by disease, and Prof. Granger places great reliance on this sign.

The greater part of the book is occupied by illustrative skiagrams, very well reproduced; their interpretation is not always as simple a matter as the author would have us believe, but his work is undoubtedly a useful contribution to the technique of radiography of these difficult regions.

The Practice of Medicine

Third edition. By A. A. STEVENS, A.M., M.D., Professor of Applied Therapeutics in the University of Pennsylvania, Philadelphia; Visiting Physician to Philadelphia General and University Hospitals. London: W. B. Saunders, Co., Ltd. Pp. 1150. 35s.

THIS work has been entirely reset and shows a number of changes. It is an excellent example of the standard smaller text-books of medicine, and it compares well with its rivals; the literary style is clear and concise, and English readers need not fear irritation by an exaggerated American terminology. Among the recent advances we notice psittacosis, scarlet fever and measles immunisation, vaccinal encephalitis, and spontaneous subarachnoid hæmorrhage. Many sections have been almost entirely rewritten. Dr. Stevens has avoided dogmatic assertions, but has not erred by giving such vague or indefinite descriptions as to give the student nothing to catch hold of. The common diseases are clearly described, and the accounts are not confused by too

many of the atypical symptoms and signs which make many text-books of medicine so bulky. The references given are well chosen and are not too profuse, and the index is admirable.

Lectures on Psychiatry

By E. D. WIERSMA, M.D., Professor of Psychiatry and Neurology, Groningen. London: H. K. Lewis and Co., Ltd. 1932. Pp. 610. 25*s*.

THIS interesting and valuable book embodies the teaching of Prof. Wiersma during the 34 years of his activity at Groningen. It is the work of an experienced psychiatrist, whose interests are predominantly psychological, with the result that experimental investigation occupies the chief place in the discussion of the phenomena of mental disorder. The arrangement bears witness to this mode of approach. After introductory chapters on material, methodology, and personality, there are five chapters on consciousness in its various aspects, followed by two on disorders of perception; then come considerations on memory and thinking, dementia, obsessions, affectivity, and disorders of will. Although dynamic psychology is not neglected, orthodox German psychology and psychopathology have clearly influenced Prof. Wiersma most, so that his book is solid rather than speculative. A great deal of the matter presented is the outcome of the distinguished researches of the author and his pupils, which cover a wide field; and the whole book is the worthy expression of an original and inquiring mind, seeking precision and clarity.

La gastrophotographie

By A. BÉCART. Paris: N. Maloine. Pp. 106. Fr.30.

THIS little monograph gives an account of the photography of the stomach by that very ingenious instrument the gastrophotor. Anybody interested in what has already been accomplished with this instrument and what may be expected from its more general use will find here all the information he wants, as well as an account of the relevant literature. Admittedly gastrophotography is still an imperfect method of examination; but whatever the reader's opinion of its present value may be, he will readily admit that Dr. Bécart has given a sane and judicial presentation of its advantages and limitations.

Les affections de l'oreille chez l'enfant

By Dr. MAX MEYER, Professor in the University of Würzburg. Translated from the German into French by Dr. P. GAUTHIER-VILLARS. Paris: Gauthier-Villars et Cie. 1932. Pp. 201. Fr.40.

THIS excellent little book has been written as a guide for the family physician, and particular care has been taken to formulate the limits of treatment in general practice and the indications for obtaining the help of the specialist. The commoner affections of the ear, especially the various forms of inflammation, are clearly and concisely discussed; and several points of importance, which are not always clearly understood by the practitioner, are explained. Thus it is emphasised that extension of suppuration to the mucosa of the mastoid cells is present in nearly all cases of acute otitis. In such cases the persistence of suppuration beyond the third week, even in the absence of other symptoms, is a reason for considering surgical intervention. Again, the distinction between central and marginal or epitympanic perforation, with the more serious prognosis of the latter, is rightly insisted on. Dr. Meyer believes that chronic suppurative otitis does not follow acute suppuration, as it were, by chance, but that such cases are destined to chronicity from the outset by reason of congenital or acquired changes in the structure of the mucosa, or when, as in scarlet fever, the pathogenic agent produces irrecoverable destruction. The endocranial complications are well described, as are tuberculous and syphilitic affections of the ear and those complicating the specific fevers. The book should be very useful to any practitioner who reads French more easily than he does German.

Diseases of the Stomach

By HUGH MORTON, M.D., F.R.F.P.S. London: Edward Arnold and Co. Pp. 184. 10*s*. 6*d*.

IN this monograph the descriptions of the various disorders of the stomach follow traditional lines and the treatment of each condition is given simply and clearly. We regret the omission of any discussion of the physiology of the stomach. It is a good custom to refresh the reader's mind, especially if he is led on a preliminary canter into the field of normal digestion by an author who has gained considerable experience in disorders of the organ, for the angle of approach is then primarily clinical rather than academic. In this book acute gastritis is discussed without preamble. We cannot agree that the stomach condition found in pernicious anæmia can be classed with that found in Addison's disease, leukæmia, and other debilitating diseases, and most modern physicians would give alkalis more often than three times a day in the treatment of ulcer. The book is, however, the result of 20 years' practice in gastric disorders and is practical and pleasant to read.

The Structure of Insanity: A Study in Phylopathology

By TRIGANT BURROW, M.D., Ph.D. Psyche Miniatures. London: Kegan Paul. 1932. Pp. 80. 2*s*. 6*d*.

THIS little essay in social psychology is a plea for the "laboratory study" of man's behaviour in the community. Crime, political and industrial strife, and insanity are all viewed as signs of mental disease; if they are to be studied rightly the moral antithesis good and bad, right and wrong, must be recognised as only the superficial evidence of a profound general disorder, a distortion of "attention," which is here defined widely as a physiological process that relates the organism to the objects about it; the implications of this view are developed with the help of a special vocabulary. Various tenets of biology and psychopathology are woven into the argument which, in places laboured, is for the most part vague and neither luminous nor happily expressed.

The Great Unknown

By A. SALUSBURY MACNALTY. Epsom: Birch and Whittington. 1932. Pp. 96. 2*s*. 6*d*.

UNDER this title we have an engaging little biography of Walter Scott, written with the devotion of a real lover of the works of "the last of the ballad poets and the first of the historical novelists—he keeps his place unchallenged by the march of time." Though the book is a small one, it contains a full précis of Scott's life, with a number of intimate details which certainly will be unknown to most readers, and whose narration justifies the puzzling title. This is the centenary year of Scott's death, and Dr. MacNalty's brief, well-balanced eulogy is timely.

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THE LANCET.

LONDON: SATURDAY, JULY 30, 1932

VITAMINS: A SURVEY

In bringing out a new edition of its report on accessory food factors, the Medical Research Council is conferring a great benefit on the scientific, medical, and lay community. The present publication does not, indeed, appear as a new edition of the older one. It has a new and (to the public) a more attractive and intelligible title "Vitamins: a Survey of Present Knowledge," and it receives a new number in the Special Report Series (No. 167). But many of us will regretfully resign the old name with its acknowledgment of paternity to Sir GOWLAND HOPKINS.

The present report retains the general arrangement and much that was of value in the earlier issue, but most of it has been rewritten. The various sections have been given out to expert workers in respective fields and have been reviewed by them; their drafts have been discussed, scrutinised, polished, and ultimately passed by a committee (the Accessory Food Factors Committee, appointed jointly by the Medical Research Council and Lister Institute of Preventive Medicine) of the chief authorities in that particular sphere in the country. In so far as accuracy and fullness could be attained this method has secured them, but only those who have taken part in producing so enormous a unanimous report can conceive of the work which must have fallen to the lot of the editor, Prof. A. HARDEN, F.R.S., the secretary of the committee, Miss HARRIETTE CHICK, D.Sc., and the various contributors. It is pointed out, however, in the preface, that the task is not likely to be undertaken again and that no further edition is to be expected in the future. The Medical Research Council now partly subsidises a new abstracting journal *Nutrition Abstracts and Reviews* to which readers of this report can turn if they wish to keep their knowledge of vitamins up to date. The fruits of this Herculean labour are offered for 6*s*. 6*d*. in a sound cloth binding. Any single section is cheap at the price, and though there are undoubtedly many people to whom only parts of the volume will appeal, they cannot complain that they are made to pay exorbitantly for material for which they have no use. In comparison with other vitamin monographs, it stands alone in smallness of price, in compactness, and in authenticity.

On turning to the new material in the volume, one finds that there are whole new sections on vitamin E and on pellagra, and a great deal of new material on the vitamin B complex; there are now 12 pages on Vitamins and Dental Tissues, and there were only 2½ before. The various vitamins are dealt with briefly but representatively from every point of view—historical, chemical, physical, their distribution, the mode of testing for them, the deficiency diseases which develop in their absence, the diets on which these have occurred or are likely to occur, and the best method of treating them dietetically. There are still, as in the older issue, special sections on the practical applications of the knowledge of vitamins to the problem of human dietaries, both infant and adult. The enormous strides in our knowledge of the variation in the nutritive value of milk, according to its mode of production, are emphasised and it is found possible to make a number of practical recommendations. On page 226 we find the following encouraging words:

> "Eight years ago it was necessary to say 'it is therefore a matter for regret that our limited knowledge of the accessory substances should restrict to some extent the consideration of practical issues' (Med. Res. Coun., 1924). Meanwhile knowledge has grown and, though still very incomplete, the limiting factor in practical application is often one of finance rather than of ignorance."

The book, with its well-selected bibliography, is to be recommended to research workers, students, medical men, and welfare workers, and even to the lay person interested in food. And if anyone is disposed to launch the criticism that fresh work—such as that on the antiscorbutic vitamin recorded in our present issue—tends to make any monograph on vitamins immediately out of date, let such a person subscribe to *Nutrition Abstracts and Reviews*.

ROAD ACCIDENTS

LAST year 180,000 accidents occurred on the roads in England and Wales, and only one out of every five persons injured paid a fee to the doctor attending. Figures were given at the annual business meeting of the British Medical Association (reported on a later page), and moved the representatives to warmth. The situation would be more tolerable perhaps if accidents fell into the category of ordinary professional visits, to be lumped together with the inevitable bad debts which fall to the lot of the doctor. But, unfortunately, news of an accident too often reaches the doctor when he is engaged in the duties of a busy surgery hour. Regardless of a crowded waiting room and a long list of visits to be paid, he must hurry to the scene of the accident, suffering delay, annoyance, and interference with the care of his regular patients for the sake of someone whom he has not seen before and is not likely to see again. His whole day is thrown out of gear, and his patients are irritated by the interruption; small wonder if he feels that this is too often an unrewarded labour. Even if he is prompt and direct enough to secure his fee on the spot, it is seldom an adequate recompense for his trouble. Dr. HELEN LUKIS, who has the misfortune to live near a main road, estimated the loss to the doctor attending an accident at about £1 13*s*. 6*d*., though no charge was made for transport of a compendious outfit, or for mental trauma. The fee, if received at all, is usually in the neighbourhood of 5*s*. 6*d*. Dr. E. H. T. NASH quoted some figures obtained

for accidents in his own district which show that by far the greatest proportion of injuries occur to pedestrians, cyclists, and motor cyclists, rather than to those who ride in cars; in other words, those who are injured are less likely to be able to afford a fee than those who escape. Owing to the objectionable legal practice of regarding the payment of a fee on behalf of the injured person as an "admission of guilt," few motorists nowadays allow their humanity to overcome their caution when they have become involved in an accident; to pay 5*s*. for the first-aid treatment of a blundering pedestrian may involve them in heavy loss afterwards if the case comes into a court of law. The result is that all parties passionately disclaim responsibility, and the doctor is the ultimate victim.

Attempts have been made to meet what is becoming a serious source of loss to some practitioners, more especially those who live near cross-roads, but few of the methods adopted are satisfactory and none universal. In Brighton there is a system by which every police officer is supplied with a printed card which he signs and sends to the doctor whom he summons to an accident. The doctor is then in a position to claim a fee of 7*s*. 6*d*. from the local authority. Unfortunately most local authorities are not ready to adopt this simple measure. Brighton put forward a proposal by which all the insurance companies in the country should join to contribute £10,000 to a central pool, out of which fees could be paid to doctors giving first-aid. The insurance companies consulted have received this suggestion coldly. In their view they are already paying fully for first-aid treatment in all such cases, although the fees are not reaching the doctor. The Royal Automobile Club has also been approached by the British Medical Association, but they are no more anxious to pay fees than the insurance companies, though they are prepared to accept the responsibility where their own servants summoned the doctor. The situation at the moment appears to be a deadlock of a particularly unjust and irritating sort. A suggestion made at the representative meeting was for the Association to ask the Government to assume responsibility. It would be striking more at the root of the evil to find means to diminish the number of accidents; but of the two problems this appears to be the less soluble.

FIVE YEARS AT THE MAUDSLEY

THE Maudsley Hospital was founded in 1923 for the early treatment of nervous and mental disorders in persons submitting themselves voluntarily for treatment. A comprehensive report on the work done at the hospital during the five years ended Dec. 31st, 1931, has just been submitted by the medical superintendent, Dr. EDWARD MAPOTHER. During this period legal changes have brought about a considerable modification in the mental hospitals under the care of the London County Council, but have not greatly affected the Maudsley Hospital itself. They have authorised expenditure on out-patient treatment and on the after-care of voluntary in-patients, and the value of these measures must not be minimised. They have also removed the Maudsley Hospital from its unenviable isolation as the only place where voluntary patients could obtain treatment at the expense of the rates, but have somewhat limited its scope in treating voluntary patients by insisting that no patient may retain his voluntary status if he is incapable of reaffirming his wish for treatment for 28 consecutive days. During the year 1931 the number of new out-patients was double that of 1923 and half as great again as that of 1926, while the new child out-patients were eight times those of 1923. The total number of out-patients was 1965 adults and 432 children. There were 796 in-patients, of whom 53 were children and 570 were rate-aided. The increase in beds since the opening of the hospital has only been one of 20 per cent.—not nearly enough to meet the increase in demands for admission. Selection has had, therefore, to become more and more stringent. As a temporary arrangement one ward of King's College Hospital, across the road, is being used as an annexe. A financial statement shows that the increase of the daily population by one-fourth has been associated with a saving of over £3000 a year; approximately half the cost of the patients in the hospital is paid by contributions. It is certain that if the Maudsley did not exist and its patients were treated elsewhere they would cost the country more. The medical superintendent suggests that it would be legitimate and very profitable to add more accommodation for private patients.

Five years ago the great majority of patients came from the neighbourhood of the hospital, particularly south of the river. The need for another "Maudsley" north of the Thames has become more and more obvious, and a start has been made by opening out-patient clinics in three municipal hospitals: Mile End, Highgate, and Notting Hill. The great increase in the proportion of patients sent by their own doctors proves the increasing appreciation of the profession. Full reports are sent to all doctors who refer cases, and inquiries are also sent to the doctor whose name the patient gives as the last medical attendant. The system for out-patients ensures that each case shall be seen by an experienced psychiatrist at his first visit. Continuity of treatment and prolonged and frequent interviews are also assured. No change seems to be occurring in the ratio of severe and milder cases attending the hospital, or of the various types of disorder. Of the total, almost exactly one-fifth fall into the "organic" group and the rest into the functional group, even though every case is classified under the organic heading if there is the slightest possible justification for it. There is a reduction in the amount and gravity of neurosyphilis. Of the 21 cases of general paralysis treated at the Maudsley during the past two years, 75 per cent. are at home and 66 per cent. are working, many of them in skilled and even responsible employment.

The standard method of treatment is a combination of malaria and tryparsamide; relapsing fever, saprovitan, milk, and sulfosin have been tried but have proved unsatisfactory. There is reason to believe that the incidence of epidemic encephalitis is decreasing; palliation of symptoms have been obtained from the use of stramonium and genoscopolamine, supplemented by luminal, bromide, sunlight, massage, and electrical treatment. Another form of mental disorder which is decreasing is that due to alcoholism, but there has been no progress in the treatment of addiction. A number of interesting cases of brain tumour have been seen at the Maudsley, and a résumé of them is to be published shortly. A study of the factors producing functional mental disorder has been made, and there is no doubt that mental stress is the commonest single factor and that the chief active contribution to recovery is psychotherapy. A special investigation has been made of anomalies of adjustment incidental to epochs and events in life. The interest in occupational therapy is growing, and a course for occupational therapists has been arranged in coöperation with the College of Nursing. Apart from the salary of the officer, this branch of therapy continues to be self-supporting.

The children's department at the hospital now has two medical officers of its own, a full-time social worker and a part-time psychologist. The services of the clinic are being increasingly used, and the type of case is changing from the aments, who formed the majority in 1923, to the "problem" child and the "nervous" child who formed the bulk of those seen in 1931. School doctors, teachers, and social organisations have shown gratifying willingness to coöperate with the hospital. Treatment is in most cases directed to the factors operating on the child from without. There is a serious lack of beds for children, a lack which is felt in other children's clinics in London. It is very unsatisfactory to treat children in wards containing adult neurotics.

PAPER FILMS IN CHEST RADIOGRAPHY

THE use of X rays is essential not only in the diagnosis but also for the treatment of thoracic disease. In diagnosis, a radiogram is usually necessary before a final opinion can be given as to the correct interpretation of abnormal physical signs, or indeed as to the absence of deep-seated disease unrevealed by physical signs. Unfortunately, when a diagnosis has been made, we cannot dispense with further X ray examinations, for these will still be required if the progress of the case is to be studied or the results of treatment accurately determined. It is unfortunate that we are so dependent upon radiology in the investigation of chest disease, for, apart from the heavy cost of equipment, the running expenses of an X ray department are by no means light. This is a fact which is apt to be forgotten by the general practitioner who advises his patient that he had better go to hospital for a radiogram of his chest. Many out-patients too do not seem to realise that a chest radiogram involves any more expense than that associated with a snapshot on the promenade at a watering-place. To the hospital committee, however, the constantly increasing cost of an X ray department is a matter of grave concern. Including overhead charges, each radiogram taken involves an expenditure equal to a lawyer's fee. Yet economy can only be obtained at the cost of efficiency, and with further radiological developments expenditure is likely to increase rather than diminish.

In some instances, expense can be reduced by fluoroscopy, for the celluloid film, which is essential if the lung markings are to be revealed in detail, is not always necessary. In the out-patient department, the size and shape of the heart and aorta can be conveniently studied with the screen, and a diagram will serve for a permanent record. It is also possible by this means to exclude the presence of any gross abnormality of the lungs or pleura. A more detailed survey is possible if the physician can spare sufficient time in the dark room for his eyes to accommodate themselves to a subdued light. But in many cases a permanent record is necessary, and hitherto our only means of securing this has been the celluloid film. The disadvantages of this otherwise excellent medium are its cost, its weight, and its inflammability. The use of a paper film would reduce the cost of each record by about half, would save expense on postage and storing, and would to some extent obviate the risks of fire. Such a film is now on the market [1] and a preliminary report on its use in routine work appears in the *American Review of Tuberculosis*.[2] From the plates illustrating this article and from examples of paper films we have examined, it is evident that though at the present time their use involves some slight loss of clarity in detail, the disparity in the results obtained by the two methods is only slight. This is no small achievement on the part of the manufacturers, for many years of experience have gone to the perfection of the celluloid film, and the paper method is only in its infancy. Radiologists at the Charité in Berlin recommend the paper film for all thoracic radiograms; for diagnosis of abdominal disease, they say, paper is usually inferior to celluloid.[3]

From these considerations it is obvious that some economies are possible in radiological departments. Especially in out-patient work a reduction in the number of radiograms can be effected by the discriminating use of the fluoroscopic screen. For the serial records, which are essential in the treatment of certain diseases of the lungs, and notably in that of pulmonary tuberculosis whether treated by rest or collapse therapy, paper films might now be substituted for celluloid films. The use of the latter might now be reserved for diagnostic purposes and for the permanent records of cases of special importance.

[1] See THE LANCET, 1932, i., 950.
[2] Barnard, Margaret W., Amberson, J. Burns, and Loew, Marion F.: Amer. Rev. of Tub., June, 1932, p. 752.
[3] Deut. med. Woch., July 22nd, p. 1162.

ANNOTATIONS

GRAHAM LUSK

THE death of Max Rubner, one of the oldest of the distinguished pupils of Carl Voit, was reported only a few weeks ago, and now comes the announcement from New York of the death of Graham Lusk, who was yet another of the world-famous pupils of Voit. In this country the name of Graham Lusk is as familiar as that of our own distinguished physiologists, largely owing to the success achieved by his classic volume "The Science of Nutrition," whose latest edition was issued some four years ago. Though by no means a book for the uninitiated or dilettante, this mine of information has proved invaluable to students of nutrition in every English-speaking country, and must have been an inspiration to hosts of workers.

Graham Lusk was born in 1866. After graduating at Columbia University he proceeded to Munich, where he worked under Voit and obtained his degree of Ph.D. From Munich he returned to the United States where he was later appointed to the chair of physiology at Yale, and afterwards at the University and Bellevue Hospital Medical College. In 1909 he accepted the chair of physiology at Cornell University Medical College and there he remained settled for the rest of his active career. His scientific work embraced many aspects of the physiology of nutrition, especially those concerned with the fate of foods after absorption. A great many of his original papers dealt with the mechanisms responsible for the specific dynamic action of foodstuffs, and in 1922 he wrote a review of this subject for *Medicine*, which he thought at the time would be his final contribution to this difficult question. However, in 1931 he discussed it once more in a review for the *Journal of Nutrition*, confessing with characteristic frankness that his previous conclusions had had to be revised in the light of recently ascertained facts. Just as Rubner was called upon by the German Government during the Great War to give advice regarding the feeding of the starving populations of the Central European Powers, so Lusk was invited by the Allies to come over to Europe to assist the Inter-Allied Scientific Food Commission in their task of assuring the food-supply of the Allied Powers during the period of food scarcity in 1917 and 1918. His attainments were recognised all over Europe and he was a member of many learned societies outside his own country; one of the latest of the honours to be conferred on him was that of foreign membership of our own Royal Society.

In the preface to the third edition of his book written in 1917, Lusk stated that he had no intention of revising it again, but the wishes of his friends compelled him once more to undertake that task, which he completed in 1928. This edition is now, unhappily, really the final one, but it will remain the monument of a man who devoted himself wholeheartedly and fearlessly to the pursuit of truth.

ARTERIO-SCLEROTIC ANEURYSM

FOR teaching and all practical purposes, a saccular aneurysm is generally regarded as syphilitic in origin. It is therefore of interest to note the exception recorded by A. Lazzeroni.[1] He describes how a woman of 72 who was recovering satisfactorily from broncho-pneumonia suddenly collapsed and died in a few hours. The diagnosis was not suspected in life, but at the autopsy a saccular aneurysm of the descending thoracic aorta about the size of a walnut was discovered. This had ruptured into the right pleural space which was filled with blood. The aneurysmal sac was full of blood clot and the wall was covered on its outer surface by a pseudo-membrane of fibrino-purulent exudate, and was in contact with the pleura, which was itself covered with a similar exudate. The inflammatory process had extended by contiguity from the pleura to the wall of the aneurysm. Microscopic examination of the sac wall showed severe and characteristic atheroma and in addition a cellular infiltration, many of the cells being polymorpho-nuclear. There was no evidence of syphilis. The diagnosis of aneurysm of the descending aorta is always a matter of difficulty, and obviously this difficulty is still greater if the sac is small. The small aneurysm which does not compress any important structure does not give rise to any symptoms; the dilatation of the aorta produces none—stretching of the aortic wall is a painless condition. In the present case the aneurysm would probably have remained latent, and indeed appeared to be in a process of repair since it was full of clot, had the accident of pleurisy and extension of the inflammatory process to the sac wall not led to rupture.

[1] Il Morgagni, May 15th, p. 643.

LOUPING-ILL

AT the present time new virus diseases are brought to light almost daily. One of the most recently established of such diseases is louping-ill of sheep. This was shown by W. A. Pool, A. Brownlee, and D. R. Wilson, in 1930, to be due to a filtrable virus of neurotropic character. The disease occurs amongst sheep in tick-infested pastures in Scotland and the Border country. The name is derived from the old Norse word meaning "leap," and according to the Oxford Dictionary the disease is so called because it causes its victims "to spring up and down when moving forward." The chief centre of study has been the Moredun Institute, where, with the collaboration of Prof. T. J. Mackie, of Edinburgh, the nature of the disease has been established after several years of study. The stages in which this has been accomplished are described by Prof. J. Russell Greig.[1] It appears, as the result of experiment, that louping-ill is conveyed to sheep through the tick *Ixodes ricinus*. There is, however, a further disease of sheep that is communicated by this tick—namely, tick-borne fever. Sheep can be immunised against louping-ill for a period of at least 11 months by subcutaneous and intradermal injections, or by intranasal insufflation of the virus. Such an inoculation is followed by a febrile reaction but not by the typical neurological manifestations of louping-ill. The inoculation, however, does not protect the animal against tick-borne fever. It is therefore presumed that these two diseases are separate; but, in view of their close association in the field, the possibility that there is some pathogenic association between them cannot yet be dismissed. It has further been established by A. Brownlee and D. R. Wilson [2] that the pig and the mouse are susceptible to experimental inoculation by the virus of louping-ill and, more recently, the monkey similarly has been infected (Weston Hurst,[3] G. M. Findlay [4]). Histologically, the disease is accompanied by a diffuse

[1] Trans. Highland and Agricult. Soc. of Scotland, 1932.
[2] Jour. Comp. Path. and Ther., 1932, xlv., 67.
[3] Ibid., 1931, xliv., 231.
[4] Brit. Jour. Exp. Path., 1932, xii 230.

meningo-encephalo-myelitis. A peculiar feature is the destruction of Purkinjé cells that is observed in varying degree. Weston Hurst found that, in monkeys, this lesion was associated with a progressive cerebellar ataxia. Brownlee and Wilson were unable to identify specific inclusion bodies in the nervous tissues of the sheep, but Hurst has found bodies that he believes to be of this nature in the cytoplasm of neurones in mice but not in monkeys. This has recently been confirmed by Findlay. Findlay finds, moreover, that inoculation of the virus of louping-ill will confer an immunity on monkeys comparable to that obtained in sheep. The circumstance that louping-ill is transmissible to sheep, mice, and monkeys suggests a similarity to Rift Valley fever, although the latter is not neurotropic, but Findlay has demonstrated that there is no cross-immunity between the two diseases.

THE USE OF SALICYLATES

MANY recent investigators have shown that the salicylates are not specific in rheumatic fever and act only as efficient analgesic and antipyretic drugs for this disease. There still remains a belief, however, that heart disease may be prevented by adequate dosage of salicylates or that the duration of the disease may be shortened. In a recent paper,[1] Drs. A. M. Master and A. Romanoff, of New York, present a careful clinical and electrocardiographic study of the effects of salicylates in patients with rheumatic fever, which suggests that these drugs have no action beyond relieving the pain and reducing the fever of this disorder. The investigation was carried out by treating alternate rheumatic patients with and without salicylates. Thirty patients served as controls and received no salicyl compounds whatever, being given occasional small doses of codeine or morphine if joint symptoms were severe or much restlessness occurred. The 33 rheumatic patients were given daily doses of salicyl compounds either orally, by rectum, or both. Adequate doses were always given, from grs. 120 to 180 a day being the average minimum and twice this amount was not unusual. Otherwise the same conditions prevailed for the two groups, the same physicians and nurses carrying out the treatment. From the clinical standpoint the course and type of the disease was almost the same in the two groups. The average age of the patients was 26, and the average hospital stay for the control group was 46 days and for the salicylate group 42 days, this being considered as near an accord as could possibly be hoped for. One death occurred in each group and acute pericarditis occurred in 11 patients in the control group and nine in the group treated with salicylates. In each group pericardial effusion was a complication in three patients. Lung involvement and pleural effusion was present in an equal number of patients in the two groups, and, in fact, an almost exact parallel is to be found in the clinical records. It is only where subjective relief is considered that the salicylate group shows any advantage, and in this group relief of joint immobility and pain certainly occurred more promptly. Exact electrocardiograph records were made daily for each patient, and not a single myocardium appeared to escape some damage, whether salicylates had been administered or not. The authors state that they have been conservative in their interpretation of what constitutes electrocardiographic evidence of myocardial involvement, including only gross changes, and even on this basis there was 100 per cent. involvement of the heart in all the patients here under consideration. Both qualitatively and quantitatively the two groups showed a surprising coincidence of changes in the electrocardiographic records, and return towards normal was equally variable in the two groups. While salicylates remain, probably, the most effective drugs for relieving the pain and reducing the temperature in acute rheumatic fever, it seems increasingly likely that no other action can be claimed for them.

[1] Jour. Amer. Med. Assoc., June 4th, 1932, p. 1878.

PRIMARY CARCINOMA OF LIVER

FEW pathologists in this country see more than an occasional example of primary carcinoma of liver. Dr. J. C. Tull, the Government pathologist in Singapore, has met with 134 cases in 17,664 autopsies, and he gives a summary account [1] of them with two good coloured plates. Nearly all were in Chinese, and the fact that all except one were in males is discounted by the fact that practically all patients in the Tan Tock Seng hospital are men. The ages ranged from 28 to 76, with an average of 43. Dr. Tull draws special attention to the short duration of symptoms; the average stay in hospital (the patients coming from a homeless class) was just over a fortnight, and none lived more than two months. Weakness and emaciation were the most common complaints; ascites was present in half the cases, jaundice in only a third. A tumour is generally palpable and often visible, and an upward extension of liver dullness is a useful sign. Anatomically, the growth may occur as a single large mass with a few tiny secondary nodules, as discrete nodules scattered throughout the liver, or as diffuse growth involving nearly the whole organ. Microscopically, 99 cases were of liver cells (hepatoma) and 35 from bile-ducts (hæmangeioma); 75 of the former and 23 of the latter showed more or less cirrhosis, fine or coarse. Metastases were relatively uncommon, most frequent in the lungs (31 cases) and abdominal glands (24 cases). There is nothing in the post-mortem findings to account for the frequency of the condition: gallstones were found in 6, flukes in 2, syphilis in 29. It must be attributed rather to dietetic habits, and presumably to the profuse use of strong condiments with the unpalatable food which is available for the coolie class. A similar frequency of the disease has been noted in Southern India and in natives in Africa, and likely enough it is due to the same cause. Accurate studies by western methods of the variations of non-infectious diseases in different parts of the world is certain to give important help in understanding how they are produced.

[1] Jour. Path. and Bact., July, 1932, p. 557.

A TUMOUR OF THE OPTIC NERVE

TUMOURS of the optic tract are rare, and those that arise in the orbital portion are perhaps the rarest of all. Consequently they have been less fully worked out than other neoplasms of the nervous system. There seems to be little doubt, however, that most of the optic nerve tumours are gliomas. This is not surprising in view of the fact that the optic tract is part of the brain, and differs from other nerves in that its component fibres are supported by glia and not by mesodermal tissue. The example recently reported by Mr. Bernard Gluck [2] is

[2] Brit. Jour. Ophthalmol., 1932, xvi., 406.

undoubtedly a glioma and exhibits most of the pathological features of the condition. The subject was a child who died seven years after removal of the left eye for optic nerve tumour. At the time of this operation the growth was discovered in the posterior part of the orbit, and, since its surgical removal was considered impracticable, it was treated intensively by radium. The tumour, however, grew backwards, and at necropsy a large mass was revealed in the left frontal lobe and basal ganglia. The microscopical appearances suggest that the tumour is an astrocytoma. This kind of tumour is known to be relatively benign and the diagnosis therefore accords with the length of the history in this case. As Gluck however points out, all gliomas are more or less malignant in respect of their invasive properties and his own case is no exception to this rule.

Clinically tumours of the optic nerve are difficult to distinguish from other tumours of this region, but the occurrence of progressive loss of sight in one eye with increasing proptosis in the direction of the orbital axis, and the development of optic atrophy or choked disc after the loss of vision suggests this diagnosis. The special interest of this particular case lies in the observations on the local effects of radium treatment in this kind of tumour.

HÆMOLYTIC STREPTOCOCCI IN RHEUMATIC FEVER

IT has usually been agreed that the power of hæmolytic streptococci to lyse red cells is not neutralised by any antibody made by an immunised animal. This is an unexpected finding, since in other cases—for example, in tetanus—an antitoxic serum is always antihæmolytic; in fact, roughly speaking, the two properties run parallel. The property of hæmolysis is undoubtedly a distinguishing feature of the more dangerous streptococci, yet it is difficult to assign specific damage in infection to the hæmolysin. If a rabbit is protected by antitoxin, living hæmolytic streptococci produce no acute symptoms.

A considerable advance in this connexion is due to the work of Dr. E. W. Todd,[1] who made the important observation that when hæmolysin was obtained from cultures prepared without the addition of serum, it showed distinct properties. Under these circumstances, it is neutralised by antitoxic sera; whereas, when it is prepared, as is usual, from cultures enriched by serum, it is more stable, and cannot be neutralised. These interesting findings have recently been extended by Dr. Todd.[1] He has utilised his discoveries to examine the power of human sera to neutralise hæmolysin, and in this way he has been able to study the immune condition of patients vis-à-vis with the hæmolytic streptococcus. He has found certain individuals to show no antihæmolysin. After acute streptococcal infections, however, they possess this property, and it is presumably transient, since all human beings have suffered from streptococcal infection yet some show no antihæmolysin while healthy. Dr. Todd's work is carried out at the Belmont Laboratories of the London County Council, and he has had unusual facilities for studying acute rheumatism. He has found that in rheumatic fever the antihæmolytic properties of patients are very high. The fact that the antihæmolytic properties occur before the rheumatic symptoms are manifested, suggests that the hæmolysin does not cause the symptoms. None the less, the changes occurring in the sera can be used to determine the importance of hæmolytic streptococci in this disease.

These findings, which are clear-cut, are in some ways surprising. The constant association of streptococcal infection of the throat with rheumatic fever has led to a belief that streptococci cause the disease, although the hypothesis has been strongly contested. But those who have upheld this association have always incriminated streptococci without hæmolytic properties; for example, the "streptococcus cardioarthritidis" of Small, whose importance was disputed by Lazarus-Barlow, at another laboratory under the L.C.C. The present work throws an entirely new light on an old problem. It certainly appears that some ætiological part is played, not by indolent streptococci, but by hæmolytic strains. It would probably be unwise to deduce that the hæmolysin itself is the dangerous factor. It appears certain that hæmolysin and toxin are different substances. Many intensely hæmolytic strains are non-toxic, in the sense understood by the American authors, such as Dick and Dochez. Toxin precipitated by alcohol is non-hæmolytic. Thus the tissue damage in rheumatic fever, if it be allowed that the streptococcus has an importance in the disease, may be due to toxin, or to direct invasion of tissues; or it may be a manifestation of supersensitiveness. These possibilities remain open. But Dr. Todd has opened a new field of research in ascertaining the relationship of hæmolytic streptococci to human disease; and he has himself made an important beginning by producing very cogent arguments in support of the streptococcal theory of rheumatic disease.

[1] Brit. Jour. Exp. Path., 1932, xiii., 248.

THE BRACHIAL PLEXUS AMONG THE JAPANESE

THE brachial plexus has always been a subject of interest alike to anatomists and neurologists. A series of studies[1] by Prof. Ko Hirasawa is not an ordinary investigation into the region, but is rather a collection of additional stones laid on the edifice to which Prof. Adachi contributed the foundation, some little time ago, in his monumental treatise on the arterial system of the Japanese. The desire to have a body of anatomy for the Japanese, founded on and applying to their structure, and not to the European types, is comprehensible and commendable, and may lead to the establishment of data of considerable anthropological interest. We know that there are well-marked racial anatomical differences among Europeans, and presumably the Japanese will be able in time to establish a "norm" of their own, by this comprehensive investigation. Prof. Hirasawa's researches were made on more than 100 bodies, not including Koreans or Ainos. He has tabulated and analysed his results with care, and compared them with European and American records. The percentages of varieties and types indicate certain racial differences, but it must not be forgotten that the tables show many inter-racial differences in Europe; for example, the results obtained among the Poles by Jachimonowicz, when dealing with the frequency of the high cervical origin of brachial nerves, is as far removed from those got in this country as the results now recorded from Japan. It is curious to observe that the origin of the ulnar from the seventh cervical nerve, here regarded as normal, occurs only in a very

[1] Arbeiten aus der IIIb. Abteilung des Anatomischen Institutes der Kaiserlichen Universität Kyoto. Editor of this part, Prof. Dr. Seigo Funaoka. Serie A. Untersuch. üb. das periphere Nervensystem. Heft 2. Plexus brachialis und die Nerven der oberen Extremität: By Prof. Dr. Ko Hirasawa. Kyoto. 1931. Pp. 190.

small number of cases in Japan. The interesting series of monographs, of which this is an example, will, we imagine, provide much analysed information for those who wish to study the correlation of variations.

SWEAT GLAND CARCINOMA OF THE BREAST

THE view that certain carcinomata in the breast are of sweat gland origin has given rise to a certain amount of controversy. A morpho-histological survey of the subject has just been published by Dr. E. K. Dawson.[1] The belief in sweat gland carcinoma has arisen as a result of deduction from two observations: first, that there frequently occur in the breast areas of glandular tissue in which the spaces are lined by large eosinophil cells ("pale cells"); and, secondly, that the cells of some carcinomata bear a close resemblance to these "pale cells." To substantiate the sweat gland origin of these carcinomata it is necessary to assume not only that the pale cells are derived from sweat glands, but also that they may give rise to carcinoma. In this paper both these assumptions are challenged, and evidence is brought forward to show that the cells in question are not of sweat gland origin, and furthermore, that in them no evidence of malignancy can be detected. The conclusions reached by Mrs. Dawson are based on the results of the examination of a considerable amount of material collected by the late Dr. James W. Dawson, which includes more than 1200 large sections from over 600 cases of various breast conditions. She was able to find no normal sweat glands in breast tissue; she notes that masses of pale cells are frequently present in cystic conditions of the breast and of other glandular organs, such as the prostate, and that they are rarely found in conjunction with normal breast acini. That there is no tendency for this tissue to give rise to carcinoma is shown by the fact that cases of cystic breast, in which large numbers of the cysts are lined by the pale cells, run a benign clinical course. Furthermore, histological examination shows these cells to be essentially degenerate in character; they show no evidence of rapid or of malignant growth. This work, which is beautifully illustrated, confirms an impression held by many of those interested in the morbid histology of the breast.

THE DROPLET DISSEMINATION OF VIRUS DISEASES

THE importance of droplet infection in the transmission of infectious disease is well recognised, and a fairly exact estimate of its mechanism has been made in certain infections. Thus A. J Eagleton,[2] in an epidemic of cerebro-spinal meningitis, was able to demonstrate the distribution of meningococci around the bed of a carrier, and J. A. Glover[3] succeeded in reducing the incidence of meningitis in barracks by increasing the space between beds. The immense importance of overcrowding in connexion with the spread of this disease was one of the early lessons of the war, when the herding of masses of army volunteers into hastily adapted accommodation was associated with a serious outbreak of meningitis. Nor is the lesson confined to this infection. The view that the influenzal pneumonia outbreak of 1918 was largelyattributable to mouth-to-mouth respiratory infection, at any rate as regards its pneumonic complications, was confirmed by the striking observations of F. Huddleston and T. G. Hull[4]; they made a bacteriological examination of the air in an amusement hall frequented by the army of occupation at Koblenz, during an epidemic of respiratory disease, and found many hundreds of times the number of bacteria in the air that were found under comparable conditions after the epidemic. Among the bacteria found in the epidemic period were pneumococci and hæmolytic streptococci, whilst in the subsequent period these pathogenic forms were not isolated.

Whether droplet infection is as important in the dissemination of the virus diseases as in that of bacterial infections is less easy to ascertain. M. G. Colvin[5] has attempted to procure evidence of the dissemination of viruses by utilising the bacteriophage as an indicator of the fate and spread of the infective droplet. In using a phage lytic for *B. megatherium* Dr. Colvin has adopted an innocuous agent for the purposes of this test, together with a non-pathogenic test bacterium to give indication of its presence. The method followed was to infect the mouth, or to spray the air, with a preparation of the bacteriophage and subsequently to note the presence and numbers of bare plaques developing upon the surface of the plates which had been inoculated with the test organism and exposed in sites which it was desired to test for the presence and concentration of the bacteriophage. Each bare plaque which develops on the plate on incubation corresponds to the deposition of a unit of bacteriophage. By such means the dissemination and distribution of the agent could be followed out upon lines similar to those sometimes employed in examining the distribution of ordinary bacilli in air. In certain initial experiments in which the mouth of one person in a small laboratory room was rinsed with a preparation of bacteriophage containing about ten units per c.cm. no contamination of six other subjects after exposure of from 1–2 hours was detected. Evidently this was mainly due to the difficulty of detecting small numbers of bacteriophage corpuscles in the upper respiratory tract. A test Petri plate, exposed for 5 minutes, at a distance of 30–60 c.cm. from the mouth of the speaker, also failed to give evidence of infection, but an exposure of 5–10 minutes at 15 c.cm. gave a positive result. The process which caused a maximum of dissemination of phage corpuscles was sneezing, which appeared to be one hundred times more infective than coughing. From the relative paucity of these results the authors draw the conclusion that in a disease such as measles, in which the infectivity is notoriously high by comparison, with, say, scarlatina or diphtheria, the number of infective particles discharged must be very numerous or extremely virulent.

In other experiments it was found that the infective particle could be detected in the dust raised by sweeping rooms which had been sprayed with a bacteriophage suspension eighteen days previously, although ordinary domestic cleaning and mopping out had been performed in the interval. The question was raised whether the bacteriophage was carried by droplets in the same way as ordinary bacteria or whether, where spraying or atomisation was used, it might exist alone in the air and be more readily disseminated. Experiments to elucidate this point showed that the phage was present only in the droplets, which behaved in precisely the same way as those infected with bacteria. The bacteriphage proved to be a good indicator of droplet infection, being

[1] Edin. Med. Jour., 1932, xxxix., 409.
[2] Jour. Hygiene, 1919, xviii., 264.
[3] Proc. Roy. Soc. Med. (Epidem. Sect.), 1928, xxi., 95.
[4] Amer. Jour. Pub. Health, 1920, x., 583.
[5] Amer. Jour. Hygiene, 1932, xv., pt. i., 247.

easy to detect and resistant to drying. Since the bacteriophage has many properties in common with viruses the general results of this investigation may be taken to indicate a close resemblance between the mechanism of contagion in virus and bacterial diseases.

THE MEDICAL CURRICULUM: A MOVE AT CAMBRIDGE

WE publish elsewhere a full abstract of a memorandum, importantly written and endorsed, which was sent in April last year to the Vice-Chancellor of Cambridge University. Its message was that the medical curriculum at Cambridge required revision, inasmuch as the important three years of the course, pursued by students in residence, were so overfilled with preparation for examinations, necessitated by M.B. and tripos regulations, that the students were overburdened, harried, and losing the benefits that they should derive from training in a university school of medicine. The memorandum gives reasons for the institution of a medical sciences tripos, which should offer a practical method of adjusting the double claims of medicine as a professional calling and a university faculty. The memorandum has now been reported upon by the University syndicate; and while the justice of its criticisms are admitted, the syndicate makes proposals for amendment in accordance with the main suggestion, the institution of a medical sciences tripos. The observations from various angles upon the existing system of medical education which are now appearing in THE LANCET have many reflections in both the memorandum and report issued from Cambridge, and both documents should be studied not so much in relation to one university school but because all medical schools and their students are facing some of the difficulties which have led to action at Cambridge. The medical sciences tripos at Cambridge, if it is instituted, will carry on for a probationary period of five years, and during this period any measure of success which may be realised will serve to assist other centres with cognate troubles to face.

ANALGESIA IN CHILDBIRTH

As a result of the successful experiments conducted by Mr. Carnac Rivett, at Queen Charlotte's and the Middlesex Hospitals,[1] the National Birthday Trust Fund is desirous of assisting the carrying out, under medical supervision, of further tests of the analgesic capsules recommended by Mr. Rivett, by supplying them free for a period of three months to all hospitals with maternity wards and midwifery training districts. Should this method of alleviating pain in maternity cases be found satisfactory, the Fund hopes to assist in making the capsules available for use in that large proportion of births in which continuous medical attention is out of the question, and for which consequently no adequate relief is possible at the present time. Dr. J. S. Fairbairn (chairman of the Central Midwives Board), Mr. Carnac Rivett, Mr. Herbert Charles, Dr. Enid Browne, and Mr. Arnold Walker have consented to form a committee to report upon the results of tests carried out by the hospitals. It is hoped that all hospitals with maternity wards and districts will be willing to assist in carrying out the tests by giving a full trial to the capsules. These, with convenient report forms approved by the medical committee, will be supplied upon application to the secretary, the National Birthday Trust Fund, Empire House, 175, Piccadilly, London, W.1.

[1] See THE LANCET, 1932, i., 1361.

Sir Farquhar Buzzard, Regius professor of medicine at Oxford, has been appointed physician-in-ordinary to the King, in place of Sir Humphry Rolleston, who has resigned. Sir Humphry will become physician-extraordinary to His Majesty, and the same appointment will be held by Dr. Maurice Cassidy, physician to St. Thomas's Hospital. Dr. J. A. Ryle, physician to Guy's Hospital, has been appointed to succeed Dr. Cassidy as physician to the Household.

Dr. A. E. Boycott, F.R.S., Graham professor of pathology at University College Hospital, London, and Dr. E. D. Adrian, F.R.S., Foulerton professor of the Royal Society and Fellow of Trinity College, Cambridge, have been appointed members of the Medical Research Council in succession to Prof. Robert Muir, F.R.S., and Sir John Parsons F.R.S., who retire on Sept. 30th after four years' service.

Mr. Samuel A. Courtauld, the chairman of the Middlesex Hospital Medical School, has given £20,000 to increase the endowment of the Courtauld Institute of Biochemistry. This brings Mr. Courtauld's total benefactions to the school to £100,000. The money, which is at present to be devoted to the stabilisation of the income of the Medical School that its work may be interfered with as little as possible by the need for economy, will later be available for additional research.

WE regret to announce the death, on July 26th, of Mr. Harold Low, consulting anæsthetist to St. Thomas's Hospital, and hon. anæsthetist to H.M. the King. Mr. Low was in his 69th year.

INDEX TO "THE LANCET," VOL. I., 1932

THE Index and Title-page to Vol. I., 1932, which was completed with the issue of June 25th, is now ready. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 7, Adam-street, Adelphi, London, W.C.2. Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Rear-Admiral A. J. Hewett is placed on retd. list at own request.

Surg. Capt. J. S. Dudding is promoted to Surg. Rear-Admiral.

Surg. Lt. C. R. Boland to be Surg. Lt.-Comdr.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Sub-Lts. R. W. Riddle and J. C. Livingston to be Surg. Lts.

Prob. Surg. Lt. (D) C. E. Brittan to be Surg. Lt. (D).

ROYAL ARMY MEDICAL CORPS

Lt. (on prob.) E. K. Malone resigns his commission.

The undermentioned are granted temporary commissions in the rank of Lt.: D. A. Beattie and W. H. Hargreaves.

TERRITORIAL ARMY

Lt. T. J. C. MacDonald to be Capt.

H. W. A. Post (late Cadet, Highgate School Contingent, Junior Division, O.T.C.) to be Lt.

INDIAN MEDICAL SERVICE

Lts. F. H. A. L. Davidson and R. T. Hicks to be Capts. (prov.).

Lt. (on prob.) Sangham Lal to be Capt. (prov.) (on prob.).

J. D. Grant to be Lt. (on prob.).

ROYAL AIR FORCE

Dental Branch.—Squadron Leader W. G. MacD. Nicholl is placed on the half-pay list, Scale A.

Special Reserve.—Flying Officer D. S. Buchanan is promoted to the rank of Flight-Lt.

SPECIAL ARTICLES

WHAT IS WRONG WITH THE MEDICAL CURRICULUM?

(A Series of Opinions Contributed by Request)

VIII

By Leslie Cole, M.D., M.R.C.P.

HONORARY PHYSICIAN TO ADDENBROOKE'S HOSPITAL, CAMBRIDGE

Criticism of the curriculum must be influenced by personal experience both in teaching and in being taught, and for this reason I may be forgiven if I quote my own. I remember vividly the feeling of relief with which I turned to clinical medicine when I had passed the examination in anatomy and physiology. I had been told that these subjects are the basis of medicine; but the relationship seemed a vague one, and during the next seven years physiology (as I had learnt it) appeared to have only a remote connexion.

Looking back, the curriculum seems to have been sharply divided into two parts: the first, in which physiology and anatomy were taught by physiologists and anatomists who had little interest, knowledge, or contact with clinical medicine; and the second, in which clinical medicine was taught by those who, because they had been educated on the same lines as ourselves, did not or could not attempt to correlate medical and physiological doctrine. After seven years I began, reluctantly at first, to retrace my steps and to teach both physiology and medicine to students. It was then that I began to understand the value of physiological theory in medical practice. Clinical methods which had largely been built up on the reading of medical text-books, the teaching of clinicians, and the observation of clinical cases, were found to need modification. Normal physiology became the basis or standard, and diseases fell into their right place as deviations from the normal. Few will deny that this approach is the right one, and for scientific medicine the only one. As an obvious example let us take the case of a middle-aged woman who has had several children, suffers from varicose veins and visceroptosis, and complains of breathlessness, giddiness, palpitations, and fatigue. She has a low blood pressure, and signs of poor circulation, but there is no other evidence of organic disease. The proper understanding and treatment of such a case will involve consideration of the normal mechanism of return of blood to the heart. If such consideration is given, not only will the varicose veins be treated and the tone of the abdominal wall improved by massage and exercises—a suitable abdominal support being provided if necessary—but particular attention will be paid to improving the posture of the body and the respiratory movements. By breathing and other exercises the return of the blood to the heart will be assisted, the output will be increased, and the whole circulation will be improved. It is true that the same treatment may be given if the direct clinical line of approach is followed, but then the treatment tends to be symptomatic, and one essential point—the improvement of respiratory movements—is liable to be missed.

THE GAP

In teaching medicine to students who have just passed their examination in anatomy and physiology a mental gap is at once apparent. The present ways of teaching physiology do not seem to give it that impetus which will make it a part of clinical thought. There are gaps between Stannius's ligature and heart block, between the pyramidal tract and hemiplegia, between the sympathetic nervous system and referred pain, which rapidly become impassible unless they are bridged by reiteration of physiological principles at the bedside. Under the present régime most of the knowledge gained so laboriously suffers disuse atrophy during the first year or two of clinical work. The foundation of clinical medicine is weakened and the fabric is afterwards unstable. The ultimate effects are seen most conspicuously in consulting practice; indeed most of the worst mistakes in diagnosis and treatment encountered in this department are clearly the result of applying medical knowledge without heed to physiological teaching. Chains of symptoms are ingeniously fitted together to form a wrong diagnosis, because no attempt has been made to understand the normal working of the mechanism which is out of order.

The cry for closer coöperation between the physiologist and the physician is oft repeated. It is so frequent that one fears that constant repetition may rob it of appeal. Lord Moynihan [1] said recently: "Much of the experimental observation in laboratories would have a far higher value in respect to immediate application to human needs if a closer brotherhood were established between physiologist and physician." Friendships made in youth are the most enduring, and certainly the friendship between physiology and medicine could be most firmly cemented at the beginning of the student's medical career while he is still studying anatomy and physiology.

I have tried to show that with present methods a rift develops at the time when the student leaves the laboratory and the dissecting-room and enters the hospital, and indeed this is very generally admitted. Dr. A. E. Barclay [2] says: "Most students notice a very wide gap, a lack of connexion between the subjects as taught for the second M.B., the anatomy and physiology, and the practical medicine of the final years." Prof. H. R. Dean [3] has suggested that pathology is the bridge which should join the two, and undoubtedly this branch of medicine does form a connexion which might be made to bear very much more weight than it does at present. But something more than a bridge is required. Physiology and anatomy should merge into clinical medicine so that the rift disappears and there is continuity between them.

CLINICAL TEACHING FOR THIRD-YEAR STUDENTS

This end, I believe, could in some measure be attained if, during the second year of the physiology and anatomy courses, one or two hours per week were devoted to clinical lectures and demonstrations by clinicians. In physiology the syllabus for such a course should comprise subjects chosen to illustrate the effects of interference with normal physiological processes, and clinical cases should be shown where possible. In drawing up such a syllabus the physiologist and physician should work together, and sometimes physiological and clinical demonstrations should be combined in the same lecture. The subjects

[1] Romanes Lecture, Brit. Med. Jour., 1932, i., 1096.
[2] Brit. Jour. Radiology, 1931, iv., 68.
[3] Brit. Med. Jour., 1930, ii., 342.

covered might comprise the following—a corresponding course of clinical anatomy being also arranged.

1. The heart muscle in disease. Compensation.
2. The heart sounds. The valves in disease.
3. The polygraph and the electrocardiograph and their uses in clinical medicine.
4. The blood pressure. The arteries in disease.
5. The blood. The red cells. Types of anæmia.
6. The blood. The white cells. Variations in disease.
7. The respiratory quotient in disease.
8. Cyanosis.
9. Some clinical uses of carbon dioxide.
10. The movements of the normal stomach. Test-meals. The physiological aspects of gastric and duodenal ulcer.
11. The digestive function of the liver and gall-bladder. Obstructive jaundice.
12. Diabetes mellitus.
13. Glycosuria.
14. Food and diet. Basal metabolism.
15. Vitamins.
16. The thyroid gland. The pituitary gland.
17. The parathyroid gland. The suprarenal gland.
18. Some effects of disease of the kidney. The urine in disease.
19. Upper and lower motor neurone lesions.
20. Localisation of lesions in the central nervous system.
21. The cerebro-spinal fluid in disease.
22. Referred pain.

Such a syllabus would contain little knowledge that was actually new to the student, but because the lectures were given by clinicians he would approach familiar ideas from another aspect. It is the realisation of this aspect of physiology which is important for him at this stage.

My claim for such a course is simply that it will bring before the student the dependence of medicine on physiology *while he is still studying physiology*. The result will be that when he goes to hospital his mind will already be adjusted for the reception of medicine as a part of the physiology that he has already learned. This alteration in the curriculum would, it is hoped, be followed by a freer entry of the physiologist into the hospital; and the break in the continuity of physiological and medical thought would to some extent be prevented.

OBJECTIONS

The criticisms of a scheme such as the above are likely to be numerous. There appears to be a deeply rooted objection to any systematic instruction of students in clinical physiology before their academic study is completed. This is especially curious since many of the current physiology books make frequent reference to interference with normal physiological processes by disease—though these are usually too brief to be really useful. In teaching physiology to the medical student, nothing is lost and a great deal is gained by speaking of the commoner deviations from normal which he will meet with. Not only does this give him an added interest in his work, but occasional comparison of the normal with the abnormal throws the former into relief, so that it is more easily learnt and later more easily applied.

It is often argued that subjects such as anatomy and physiology, which are learnt at a university, should be taught as sciences, purely from the point of view of developing the mind and educating the critical faculty. I will not deny that the importance of this is paramount. It must, however, be remembered that anatomy and physiology are the two subjects that will form the basis of the subsequent work of at least 80 per cent. of students, and to me it is inconceivable that some knowledge of their application can detract from their value in education. It is clearly undesirable that these subjects should be taught solely with the idea that they will be useful later in the practice of medicine, and the fear of this is perhaps one of the reasons why the practical side is kept so much in the background. It is unlikely, however, that the brilliant man will be damaged by the knowledge that his studies will be of definite use to him later, and I am sure that if students of moderate ability were early shown the importance of anatomy and physiology they would later be less eager to cast them aside.

MEDICINE AND THE LAW

A New Way with Scottish Legislation

THE Children and Young Persons Act and the Town and Country Planning Act, both of which received the Royal Assent recently, have one feature which good judges have declared to be not only unusual but even unconstitutional. Each of these Acts contains a final clause which authorises the creation of corresponding Acts for Scotland, although their provisions were never discussed or printed as Scottish Bills and were never referred to the Scottish Committee of the House of Commons. These Scottish Acts are to be placed upon the statute-book as separate statutes, with separate chapter numbers as of the present parliamentary session, although they have neither been passed in that form by Parliament nor presented to His Majesty for Royal Assent. Subsection (1) of Section 89 of the new Children and Young Persons Act declares that "This Act shall apply to Scotland subject to the adaptations and modifications specified in the Fifth Schedule to this Act." That is a quite common type of provision. Acts framed as if applying to England only are often thus applied to Scotland. Subsection (2), however, is novel. It directs the Clerk of the Parliaments to prepare and certify a copy of the Act as thus applied to Scotland with the appropriate adaptations and modifications already specified. This copy is to omit Section 69 (the application clause) and the Fifth Schedule (the adaptations and modifications), and it is to be cited as the Children and Young Persons (Scotland) Act, 1932. It is to have effect as a separate Act of the present session, and, when printed among the statutes of the session, is to be numbered as cap. 47, following the Children and Young Persons Act, 1932 (the English Act), which is cap. 46. An exactly similar provision is made in the Town and Country Planning Act. Thus in each case two birds are killed with one stone. It is undoubtedly convenient to save parliamentary time, and to give Scotland a clean print of a rather complicated enactment, with all Scottish equivalents for English legal phrases, local authorities, and so on. But, inasmuch as Scotland will now be governed by an Act which no Scotsman has previously seen in print, notable stimulus may be given to the Scottish nationalists who protest that Scottish legislation should once more be framed, discussed, and passed in a Scottish Parliament, and who declare that matters affecting Scotland are not properly considered at Westminster.

For this new device of the draftsman there is one precedent. In the emergency period of the war the Air Force Act was evolved by simply taking a copy of the Army Act and making the appropriate alterations. The emergency period being now happily past, it may well be asked why an Act should not at least be published as a Bill before it appears upon the statute-book. Will all future legislation for Scotland take this somewhat surreptitious form? Clause after clause of the Town and Country Planning Bill was

contested by members of Parliament, who argued that the Minister of Health was thereby being given legislative powers which should be reserved for Parliament alone. The argument loses weight if Parliament can no longer do its own work as a legislative machine.

Unregistered Practitioner and Criminal Abortion

On July 21st Richard William Starkie was sentenced at the Central Criminal Court to 18 months' imprisonment for using an instrument with intent to procure miscarriage. The accused, giving evidence in denial of the charge, said he had held the degrees of L.R.C.P., M.R.C.S. and had formerly been a police surgeon for 11 years but was struck off the Register about ten years ago. He claimed to have made a study of gynæcology and to have held an important post in a gynæcological hospital. Cross-examined by Sir Percival Clarke, he asserted his full right to practise as a doctor provided that he did not call himself a registered practitioner. After the jury had returned the verdict of guilty, a police officer informed the court that Starkie was sentenced at the same court in 1921 to nine months' imprisonment for administering a noxious thing with intent to procure miscarriage; in 1929 he was convicted of procuring drugs. Mr. Justice Roche said he would refrain from passing a sentence of penal servitude because Starkie had not been before the court for ten years on a charge of that nature.

It is of course impossible to standardise punishments; judges must take all circumstances into account in each case and no two cases are alike. In dealing with criminal abortion, however, comment has sometimes been justified in attributing a special individualism to the bench. One judge will punish it heavily as a serious crime dangerous alike to public morals and to the health of the patient. Another will treat it lightly as almost a benevolent and praiseworthy practice rather than a criminal matter. Now we note a third view—that criminal abortion need not be visited with heavy punishment if not committed oftener than once in ten years.

A Year's Motoring Offences

The Home Office return of offences relating to motor vehicles for the year 1931 shows that these offences are increasing. The benevolent system of dealing with minor offences by a mere police caution is evidently having full trial. Two-fifths of the offences in connexion with lighting were so dealt with in 1931, one-quarter of the cases of failure to stop after accident or to report accident and one-eighth of the cases of careless driving. Nearly a thousand cases of failing to insure against third-party risks were disposed of by police caution only and three cases of driving while under the influence of drink or drugs. Imprisonment without the option of a fine was imposed on 228 persons in respect of 261 offences; 162 of these sentences were for taking a motor vehicle without the owner's consent, 49 for driving while under the influence of drink or drugs, 18 for reckless driving, 1 for causing bodily harm, and the rest for various licensing offences. These statistics deal only with the results of proceedings in courts of summary jurisdiction. Thus of 64 manslaughter cases 46 were sent for trial and the results of these will appear in the volume of criminal statistics which covers the work of the courts where the jurisdiction is other than summary.

Lending a Car to a Friend

The recent return of motoring offences also excludes proceedings under the Revenue law—i.e., those for which an excise penalty is provided. An odd instance of such proceedings was lately reviewed by the High Court. The owner of a car went abroad in 1931, from the end of January till nearly the end of July. He gave a friend permission to use the car during his absence, provided that the excise licence was renewed when it fell due. When the owner went abroad he had taken out the excise licence and paid the duty up to the following March 24th. The friend renewed the licence in the owner's name for a period expiring on the last day of June. On July 1st, the day after the licence expired, the friend was found driving the car in Sussex. Proceedings were thereupon taken against the car-owner (who was still abroad) for an excise penalty for having used a motor vehicle for which a licence under the 1920 Finance Act was not in force. The friend was summoned for aiding and abetting the owner to commit this offence and was convicted and fined. The owner was also convicted but appealed. He naturally argued that he could not have been "using" a car in Sussex on July 1st when he was not in England at all. The prosecution seems to have confused itself by referring to a passage in the Road Vehicles (Registration and Licensing) Regulations which defines "owner" as "the person by whom the vehicle . . . is kept and used." It seems to have been suggested that a man, though outside the country, could keep a motor vehicle in Sussex even if he did not use it. The King's Bench judges ignored the suggestion and allowed the appeal. It was the friend who was using the car on July 1st. This was not a case of master and servant or of principal and agent. The owner, said Lord Hewart, was no more responsible for using the car without a licence than he would have been in an action for damages if on July 1st the vehicle had injured a pedestrian.

Dangerous or Careless Driving

Next day the High Court judges upset the conviction of another motorist by magistrates. The Road Traffic Act, as is well known, follows up the offence of driving in a manner dangerous to the public (in Section 11) with a lesser offence of driving without due care and attention (in Section 12). A lady was summoned before the Southampton magistrates for an alleged offence under Section 11. Her solicitor contended that the evidence for the prosecution had disclosed nothing more than an error of judgment or, at the worst, careless driving. The justices thereupon announced that the evidence did not justify a conviction for dangerous driving under the earlier section, but they convicted her of careless driving under the later section and fined her £2 and costs. Her solicitor protested that she was being convicted of an offence with which she had not been charged; there had been no alternative summons before the court and the defence had not consented to the charge being reduced to one of careless driving. The magistrates paid no attention to the protest, but the High Court has now ruled that the magistrates were wrong. The conviction has consequently been quashed, with costs against the police.

Princess Alice, Countess of Athlone, recently opened the new buildings of the Wincanton and East Somerset Memorial Hospital, which have been erected at a cost of £6653. There are 12 beds and two private wards, all on the ground floor.

THE CAMBRIDGE MEDICAL CURRICULUM

A MEMORANDUM on the course and examinations taken by medical students at Cambridge, with a covering letter endorsing it, was submitted early last year to the Vice-Chancellor of the University. The memorandum was designed to show that a scrutiny of the educational curriculum of the medical students during residence at Cambridge required radical changes. The present situation is, the memorandum submits, that the student's time is over occupied, if, in addition to sitting for the M.B. examinations, he wishes to graduate through the natural sciences tripos. They find a strong feeling in the University that graduation through an honours tripos is the right procedure, if the full benefit of university training is to be obtained, but the pressure upon the medical student has become such that those who supervise their studies at the various Colleges have found it difficult to insist that their charges should take this larger view.

From the group of University authorities who submitted and endorsed the memorandum a committee of three was selected to draw up the document, which, therefore, is the work of the Regius Professor of Physic (Sir Humphry Rolleston), the Professor of Pathology (Dr. H. R. Dean), and Dr. E. D. Adrian, these having the assistance at the majority of the sessions of Dr. T. S. Hele, supervisor of medical studies at Emmanuel College.

The Memorandum

The committee began by studying an analysis of the whole situation supplied to them by Dr. A. E. Clark-Kennedy, supervisor of medical studies at Corpus College. This showed how difficult it was for the medical student to combine the courses for the 2nd M.B. with those for Pt. I. of the natural sciences tripos, with the consequence that medical students either took that tripos under a handicap or did not sit for it. The committee accepted this view and addressed a close questionnaire to the collegiate supervisors and directors of medical studies. In this they asked how far the degree obtained through the natural sciences tripos, Pt. I., is of value to the average medical student, and whether, for example, the time spent could not be more valuably directed to the primary F.R.C.S. examination; if, supposing the student decides to take Pt. I. of the natural sciences tripos, this should be done before or after passing the 2nd M.B. Pt. II.; if the number of medical students who take the natural sciences tripos is decreasing, and whether some adjustment of two sets of examinations, which offer different standards but require the same essential subjects, could be made; and, if such adjustment should take the form of a medical sciences tripos, whether the supervisors would approve of the procedure. This questionnaire was fully and helpfully answered; in almost every case a written reply was sent, and in addition, 22 supervisors of medical studies, representing 18 Colleges, expressed their views personally to the committee. 19 meetings of the committee were held and their memorandum covers the ground exposed by the questionnaire.

Cambridge, the committee point out, is not a complete medical school, only the pre-clinical years being spent in residence, so that the reputation of the school depends on the quality of the training provided in the fundamental branches of natural science. They divide the training into three stages: (1) the work for the 1st M.B., consisting of elementary training in physics, chemistry, and general biology; (2) the work for the 2nd M.B., comprising two stages, (*a*) anatomy, physiology, some organic chemistry, pharmacology, and a slight introduction to pathology and bacteriology; (*b*) a period of specialised (and in the case of anatomy and physiology, relatively advanced) training in those branches of science an understanding of which is essential to the study of medicine; and (3) clinical practice and training, concerning which the report is largely silent, such work not being done to any extent by students in residence.

The memorandum deals next with the relation of university to vocational training. It runs:—

> Stage I occupies from one to two or more years, and as time goes on larger numbers of students complete this stage at school before coming into residence at Cambridge, and go to a London hospital at the end of the third year. Clinical study at a London hospital [1] occupies three or more years. That is to say, out of a total period of study, which is seldom less than seven years, the time spent in Cambridge is in the majority of cases not more than three years.
>
> The courses given in Cambridge for the 2nd M.B. do not differ essentially from those given in other English and Scottish universities, and there is no reason to think that the standard is higher in this examination than in many similar examinations in other universities. The great advantage and the only advantage which the medical school, as apart from the general influence, of the University of Cambridge has to offer to the medical student is the opportunity to obtain the training in the fundamental sciences which is provided by preparation for the natural sciences tripos. Unless a medical student works for the natural sciences tripos, he misses the scientific advantage of residence in Cambridge, and it is possible that a student who proposes to limit his effort to the courses provided for the M.B. examination might get a better training at some other medical school.
>
> It must be a matter of grave concern to the University if any large number of medical students refuse or even are reluctant to take the natural sciences tripos. If it can be shown that in the course of time it has become unduly difficult or even inadvisable for a medical student to attempt the natural sciences tripos, then it is obvious that the curriculum of the medical student in Cambridge is in urgent need of reconsideration and reform.

The committee took information as to whether changes in society or the University caused by the war have altered the attitude of the student towards sitting for the natural sciences tripos, and found that it had done so. Most of the supervisors held that medical students ought to take the natural sciences tripos, but admitted that they had not enough time to profit by studying for it, and said that a certain number devoted the third year of their studentship to preparation for the primary examination of the F.R.C.S. Eng. as more likely to be useful. Investigation showed that in the period 1906–1911 77 per cent. of the medical students took the tripos, whereas in the period 1920–1926 the proportion had fallen to 44 per cent., and this in spite of the fact that an increasing number of students completed their studies for the 1st M.B. before residing. The committee found that the majority of medical students who take the tripos take the 2nd M.B. at the end of their second year. The work for the 2nd M.B., Pt. II., is difficult and important, and when it is passed the student has a great part of his special work for the tripos still before him; work during the long vacation may assist him, but in the tripos he will have to face competition with those who have prepared for it unhampered by medical examinations. With so little time at his disposal he limits his endeavours in the tripos to three subjects—physiology, anatomy,

[1] Elsewhere it is indicated that the clinical work need not be done at a London hospital.

and zoology—and says the report, "to sum up, the difficulties appear to be that the student has so much work to do in preparation for the 2nd M.B., Pt. II., that his preparation for the tripos is crowded into his third year, and what should be a period of thoughtful study of the theories and principle of science is apt to degenerate into nine months cramming of facts. At present a medical student attempts or is encouraged to attempt to reach the standard of the B.A. (or as it would be called elsewhere, B.Sc.) with honours in three years, and at the same time to pass a series of rather difficult examinations for the M.B., trusting for success to extra work and to the overlap between subjects of the 2nd M.B. and the tripos examinations." Further, the committee points out there is a grave difference of opinion as to the best sequence of the examinations—i.e., whether Pt. I. of the tripos should be taken before or after the 2nd M.B. The knowledge required by the student in chemistry and biology has increased manifold, and new subjects, like chemistry and pathology, have appeared. "The increase of knowledge," they say, "has led to a multiplication of courses, and an addition to the demand made on the student's time and industry. We think that the medical student is overworked, over-examined, and harried by a very complicated lecture-list and time-table . . . and is not able to take a reasonable share in the social, athletic, and other College and University activities which play so large a part in the training which the University provides for the students of other faculties." The committee point also to the confusion produced by the fact that the M.B. and tripos examinations are arranged by several different Faculties of the University.

The committee discuss, as a compromise measure, the modification either of the 2nd M.B. or the natural sciences tripos, so that the passing of one or other would suffice for graduation and passage to the 3rd M.B. They do not recommend the compromise in either direction, but give reasons for thinking that the institution of a medical sciences tripos is logical. They are also strongly of opinion that it would be prejudicial to the general education of the majority of schoolboys if they were required to pass the 1st M.B., as at present constituted, before coming into residence.

In a closing summary, the chief difficulties ahead seemed to the committee to be: (1) the absence of a definite opinion either in the University or the Colleges as to the preparation which an intending medical student should have before he comes into residence; (2) the amount of work involved by an attempt to complete all parts of the 2nd M.B., and Pt. I. of the natural sciences tripos within three years; (3) the complexity of lectures and practical classes for two concurrent but almost uncoördinated systems of examinations, and the multiplicity of those examinations; and (4) the absence of agreed opinion as to the best arrangement of the student's time, which led to different advice from collegiate supervisors.

An appendix prepared for the committee by Dr. Hele, Dr. Clark-Kennedy, and Mr. Ranner contains the statistical evidence derived from the University records.

Report of the Syndicate on the Memorandum

The syndicate appointed to consider the matter report that they agree with the main conclusions. Accepting the classification of the examinations, they point out that an increasingly large proportion of medical students pass the 1st M.B. while still at school. They find that to reach the standard of the B.A. with honours in three years, and at the same time to pass a series of examinations for the M.B. degree, has the difficulty that the subjects for the natural sciences tripos and the 2nd M.B., though overlapping, require different standards, so that it is difficult for the medical student to do as well in a science degree as the non-medical competitor. But they point out that unless the student works for the natural sciences tripos he misses the educational advantages of residence in Cambridge. "He may receive an adequate technical training but can lay no claim to special merit, which detracts from the reputation of the school."

The syndicate point out that at the present time the curriculum is supervised by three separate Faculty Boards, and that while the interests of the Board of Medicine have been confined to the M.B., those of the Faculties of Physics, Chemistry, and Biology have regard to the natural sciences tripos. They consider it the business of the University to produce men competent and ambitious to undertake research, and agree with the memorandum that the curriculum is unsatisfactory and that the need for revision is urgent.

SUGGESTIONS FOR REFORM

While the syndicate propose no change in the regulations which permit students to take any part of the 1st M.B. before or after matriculation, they do propose: (1) that in the 1st M.B., Pt. II. (mechanics) and Pt. III. (physics), the subjects should be combined into one Pt., and the present Pt. I. of the 2nd M.B. (organic chemistry and pharmacology) should form Pt. IV. of the 1st M.B. In Pt. I. (chemistry) stress, they say, should be laid on physical rather than inorganic chemistry.[2]

They consider that the only satisfactory way to lighten the burden of the student is to remove the confusion of duplicate examinations, and hold that all students should be compelled to attempt a tripos. The modification of Pt. I. of the existent natural sciences tripos, so that the student who had passed it should be able to proceed to the 3rd M.B., would substitute that tripos for the 2nd M.B. A scheme whereby the existent 2nd M.B. should be a qualifying examination for Pt. II. of the tripos would also do away with duplicated examinations. But for reasons stated they hold that neither of these changes could be made in a satisfactory manner, and came to the conclusion that a medical sciences tripos should be instituted, the passing of Pt. I. of which should qualify the student, obtaining honours, to proceed straight to the 3rd M.B. They point out that in such a tripos, in order to secure a breadth of view, subjects should be included which are not included in the 2nd M.B., but they recognise that certain students would be well advised to sit for the existent natural sciences tripos, and are prepared to arrange modifications in the regulations, both for the natural sciences tripos and for the M.B. degree to facilitate the situation.

THE MEDICAL SCIENCES TRIPOS

The subjects to be included in the medical sciences tripos, Pt. I., as approved by the syndicate, are set out and here the difference between the new examination and the 2nd M.B. lies mainly in the importance placed upon embryology and morphology which are to be taught with topographical anatomy under one

[2] The existing plan of the present curriculum will be found in the Students' Number of THE LANCET, August 29th, 1931 p. 440.

inclusive head—*anatomy*. With regard to *physiology*, provision will be made to combine the instruction given in the departments of *biochemistry* and *physiology* and to give instruction in *pharmacology* with the latter. The suggestions in respect of *pathology* are that this subject, which at present falls under Pt. II. of the natural sciences tripos should come into Pt. I. of the medical sciences tripos, but as the subject forms Pt. I. of the 3rd M.B., it is not suggested that candidates should necessarily take pathology in the tripos. For the tripos *anatomy* and *physiology* are compulsory and a third subject is necessary. If the student elects to omit *pathology* he should offer two other subjects, such as special courses in *anatomy*, *biochemistry*, or *zoology*, where comparative anatomy, paleontology, and embryology of vertebrates would be required with knowledge of parasitism and genetics. The syndicate stress the educational importance of these latter subjects, and feel that any scheme for a medical sciences tripos, Pt. I., must be elastic and well planned to cater for the needs of different students. With regard to the medical student sitting for the existing natural sciences tripos instead of the medical sciences tripos they proposed that compulsory anatomy and physiology should have the same scope as in each tripos and that the examiners should be largely identical.

The time to be allotted to the different subjects is stated in terms of hours per week, the syndicate having given careful consideration to the opinions of the authors of the memorandum that under present conditions the medical student is not able to take a reasonable share in the social, athletic, and other College and University activities.

They propose that the arrangements for the medical sciences tripos, Pt. I., and for admission to the 3rd M.B. should be as follows:—

1. That the subjects for Pt. I. of the tripos be classified in the following way:

Anatomy (including topographical anatomy and some embryology and morphology) ..	2 units
Physiology (including pharmacology and some biochemistry taught in the Biochemical Department	2 units
Optional Anatomy	1 unit
Zoology	1 unit
Pathology	1 unit
Biochemistry	1 unit
Chemistry	1 unit

2. That the examination for the medical sciences tripos, Pt. I., be constituted as follows:

Physiology:	2 units.	Two papers and practical, and viva voce.
Anatomy:	2 units.	Two papers and practical, and viva voce.
Other Subjects:	1 unit each.	One paper and practical, and viva voce.

Each unit is to carry with it the same number of marks. The questions set in any paper are to be approved by the whole body of the examiners.

3. That a student be required to take some combination of subjects equivalent to six units.

The syndicate are of opinion that anatomy, biochemistry, pathology, and physiology, should be transferred from Pt. II. of the natural sciences tripos to the medical sciences tripos, regulations for admission remaining unaltered. And they find it essential that all the courses and examinations taken by medical students, either for the medical sciences tripos or the M.B. degree, should be under the control of one faculty board.

The report closes with a note on certain modifications in respect of the M.D. thesis, and brief comments on the financial alterations implied in their recommendations. They consider that the scheme as set out could probably be financed if each medical student paid a terminal composition fee of 15 or 16 guineas while reading for Pt. I. of the tripos. They recommend that general approval be given to the proposals, and this is made with a promise that they will put forward a report recommending the necessary changes of ordinances in so far as they are competent to do so.

IRELAND

(FROM OUR OWN CORRESPONDENT)

B.M.A. MEETING, 1933

It appears to be decided finally that the annual meeting of the British Medical Association for 1933 will be held in Dublin. Some suggestions have been vaguely current to the effect that the political atmosphere might render it advisable to hold the meeting elsewhere, but these suggestions have not affected the Council or the Representative Meeting. The preparations for the meeting are already well forward in the hands of the local executive. The two Universities, the City of Dublin, the two Royal Colleges, and the Royal Dublin Society have been generous in their offers of hospitality, placing their respective premises at the disposal of the committee. It is intended to hold the Representative Meeting in the lecture hall of the Royal Dublin Society, at Ballsbridge, while the reception rooms and the trade exhibition will be in the Mansion House, and the sectional meetings will be held in the lecture rooms of Trinity College and University College. For presidency Dr. Thomas Gillman Moorhead was the unanimous choice of the Leinster branch, and that choice has now been ratified by the Association. Dr. Moorhead, who is Regius professor of physic in the University of Dublin since 1925, is also at the moment president of the Royal College of Physicians of Ireland, president of the Royal Academy of Medicine in Ireland, and president of the Association of Physicians of Great Britain and Ireland. It need hardly be added that he is an outstanding figure in Irish medicine.

FIRST-AID WORK AT THE EUCHARISTIC CONGRESS

The great numbers of people who visited Dublin at the time of the Eucharistic Congress, when religious services attracting an audience of more than half a million were held, made a heavy demand on the work of the St. John Ambulance Brigade in Ireland. Some 700 voluntary workers—ambulance men and nursing sisters—were mobilised for the work, and for several nights the first-aid service was continued until three or four in the morning. In all, nearly 7000 cases were attended, the great majority being faints, heart weakness, and exhaustion from heat. Only two fatal accidents occurred.

JUBILEE OF THE FRENCH OPHTHALMOLOGICAL SOCIETY

La Société Française d'Ophtalmologie celebrated last week the fiftieth anniversary of its foundation, when representatives from all over the world were entertained as guests of the society from July 17th–21st at the Hotel Majestic in Paris. The mornings were devoted to scientific meetings, which began at

8.30 A.M., thus allowing time for nearly 80 papers to be read and discussed. Following the custom of the society a report on a chosen subject was prepared by certain members and published in advance for discussion at a special meeting during the congress. Of recent years, these reports have dealt with the slit-lamp appearances of different parts of the eye; this year's subject was the vitreous. Redslob, of Strasbourg, dealt with its development, structure, and physico-chemical properties, and Koby, of Basle, with its bio-microscopy; Dejean, of Montpellier, and Mawas, of Paris, made valuable contributions to the discussion.

A large number of papers dealt with retinal detachment. One of these came from Coppez, of Brussels, grandson of Henri-Baptiste Coppez, one of the founders of the society. This family of famous ophthalmologists was also represented at the meeting by the intermediate generation, for Henri Coppez read a paper on ocular synergic movements illustrated by a film.

It is one of the pleasant habits of the society to ask their foreign guests to preside over the meetings and in turn the chair was occupied each day by a different national. The afternoons and evenings were given up to social gatherings. Addresses of congratulation were presented at a special meeting on July 18th where the chair was taken by the Minister of Public Health, Mr. Justin Godard. Leslie Paton, of London, presented, on behalf of the Ophthalmological Society of the United Kingdom, an illuminated Latin address, which was received with acclamation. The main addresses from other countries were presented by Krückman (Germany), Sachs (Austria), van Duyse (Belgium), Parker (America), Marquez (Spain), Wever (Holland), de Grosz (Hungary), Ovio (Italy), Patry (Switzerland), and Szymanski (Poland). Van der Hoeve (Leiden) spoke on behalf of the International Ophthalmological Council, and René Onfray, the energetic secretary-general of the society, gave an eloquent account of the birth and history of the society.

A reception at the Hôtel de Ville, a banquet at the Hotel Majestic—during which Prof. van der Hoeve presented to the society on behalf of the guests—an engraved silver chairman's bell and an excursion by river to Sèvres were among the festivities arranged, and the private hospitality offered by resident members of the society will long be remembered by those who were fortunate enough to be their guests.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 16TH, 1932

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 37 (last week 34); scarlet fever, 1413; diphtheria, 705; enteric fever, 63; acute pneumonia (primary or influenzal), 523; puerperal fever, 39; puerperal pyrexia, 112; acute poliomyelitis, 4; encephalitis lethargica, 6; dysentery, 5; ophthalmia neonatorum, 74. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on July 19th–20th was as follows:—Small-pox, 51 under treatment, 2 under observation; scarlet fever, 1400; diphtheria, 1385; enteric fever, 20; measles, 981; whooping-cough, 410; puerperal fever, 23 (plus 10 babies); encephalitis lethargica, 230; "other diseases," 104 At St. Margaret's Hospital there were 16 babies (plus 11 mothers) with ophthalmia neonatorum.

Deaths.—In 117 great towns, including London there was no death from small-pox, 1 (1) from enteric fever, 25 (6) from measles, 6 (4) from scarlet fever, 28 (7) from whooping-cough, 26 (2) from diphtheria, 49 (19) from diarrhœa and enteritis under two years, and 13 (4) from influenza. The figures in parentheses are those for London itself.

Of the deaths from measles and whooping-cough, 5 each were reported from Liverpool. Diphtheria accounted for 6 deaths at Liverpool and 3 at Manchester.

The number of stillbirths notified during the week was 294 (corresponding to a rate of 43 per 1000 total births), including 40 in London.

OBITUARY

WILLIAM JOHN ANSON COLDSTREAM, M.B. Edin., I.M.S.

IN Captain W. J. A. Coldstream the Indian Medical Service has lost an officer whom it could ill spare. As a student at Edinburgh he won many distinctions, including the Ettles prize; and he graduated in 1925 with first-class honours. After graduation he obtained appointments as resident house surgeon and house physician in the Royal Infirmary of Edinburgh; and in 1926 he joined the Indian Medical Service. Always interested in surgery he proceeded, on his first opportunity to the Fellowship of the Royal College of Surgeons of Edinburgh. A colleague writes:

"Though the deep knowledge, the clear judgment, and the skilful hand will be sorely missed, it is for other qualities that his brother officers will mourn him. His nobility of mind, his kindliness, and his courtesy made him a valued friend wherever he went."

Captain Coldstream leaves a widow.

PRINCE OF WALES'S HOSPITAL, TOTTENHAM.—Last week the Prince of Wales opened a new out-patient department and pay-bed blocks at this hospital, of which he is patron. The cost has been £30,000, of which £13,000 has yet to be raised. The Prince pointed out that the accommodation had long been totally inadequate, and that the new tonsil and adenoid ward would meet an urgent need. Sir Albert Barratt, who had promised to give a hundredweight of half-crowns, handed the money to the Prince in the form of a cheque for £448.

OVERCROWDED MENTAL HOSPITALS.—The report of the Staffordshire Mental Hospitals Board for 1931 shows that at Stafford Mental Hospital there was overcrowding to the extent of 66 males and 101 females. The admission hospital for 56 patients, now in course of erection, the proposed convalescent blocks and the proposed annexe for 12 tuberculosis patients on the female side will provide, when complete, further accommodation for 53 males and 65 females. The Burntwood and Cheddleton Hospitals are also overcrowded, and Dr. W. F. Menzies, the medical superintendent of the latter, recommends that, instead of building new hospitals, additional blocks should be added to existing buildings. The overcrowding in these hospitals, he adds, "grows worse every month."

HOUSING AT BRIGHTON.—The Brighton Corporation has ratified a suggestion by the medical officer of health concerning two specified unhealthy areas. These comprise 165 houses whose rents range from 5*s.* to 12*s.* In his report to the corporation, Dr. Duncan Forbes said that the economic rents worked out, for two-bedroomed, three-bedroomed, and four-bed-roomed houses, at 10*s.* 3*d.*, 11*s.* 3*d.*, and 12*s.* 3*d.* respectively, but in order to simplify collection, and so that there might be a surplus for bad debts, &c., the rents fixed provisionally were 11*s.* 12*s.* and 13*s.* respectively. These rents were reasonable, but with other charges, such as that for electricity, it was likely that there might be difficulty in finding tenants able to pay, and bad debts were bound to follow. "The best way out of the difficulty," Dr. Forbes says, "is to buy houses for the poorer tenants. In the past, houses with vacant possession have been bought with the consent of the chairman of the health committee and the town clerk. Now I should advise that occupied houses be bought where the tenant agrees to accept the offer of a new house."

BRITISH MEDICAL ASSOCIATION

CENTENARY MEETING IN LONDON

PROCEEDINGS OF THE REPRESENTATIVE BODY

THE annual Representative Meeting of the British Medical Association opened at Tavistock House on July 21st, with Dr. E. K. LE FLEMING in the chair. Prof. Thomas Gillman Moorhead, Regius professor of physic at Trinity College, Dublin, was elected President of the Association for 1933–34.

"Agreed Statements" on Medical Advances

Dr. A. KEITH GIBSON, for Kensington, moved that the Council should consider the advisability of issuing, from time to time, agreed statements regarding recent advances in medicine, such statements to be published as supplements to the *British Medical Journal*, or in any other way, and at such intervals as might be found necessary. The *Journal*, he said, contained much admirable scientific material, but the general practitioner searching for something of practical value to him in his work often had difficulty in picking it out. It ought to be possible to present occasionally an agreed statement on recent advances in medicine. On any controversial scientific issue, he supposed, those members of the profession interested agreed about nine-tenths of the facts and only diverged upon the last tenth. It should be possible to present a digest of agreed opinion in a compact form, and the cost would not be great.—He was supported by Dr. ASTLEY V. CLARKE, but Sir ROBERT BOLAM, although he hesitated to charge them with negligence, thought that their suggestion was unnecessary if they read the *Journal* regularly. Members were in a position to assess and digest this material, and they should not require spoon-feeding. It was not possible to provide, week by week, some suggestion which could be put into practice and secure an immediate return. In any case it would be a hazardous task to make such a digest—the work of the weather bureau would be a sinecure in comparison. He assured Dr. Gibson that the principle of the Kensington motion would be taken into account, but suggested that a time of economy was not suitable for such an undertaking. The motion was withdrawn.—A similar motion introduced by Dr. ERNEST WARD, for Torquay, suggesting the quarterly issue of such special supplements, was also withdrawn.

Advertisements of Locum Tenents

Dr. G. MACKIE, for the Shropshire and mid-Wales branch, pointed out that locum tenents advertising in the *Journal* (not through an agency) often proved to be unsatisfactory, and that certain advertisements of alleged desirable professional premises were simply an inducement to "squatting." He introduced a motion to instruct the Council to review the whole question of the insertion of such advertisements. He thought there should at least be a disclaimer of responsibility by the Council printed above advertisements of this kind. Advertisements of alleged professional premises were often inserted by a local house agent, who had paid no attention to the claims of doctors already established in the district.—Dr. N. E. WATERFIELD supported the part of the motion having reference to professional premises.

Dr. C. E. S. FLEMMING pointed out that there was no need to reply to private advertisements; practitioners should engage locum tenents through an agency.—Sir ROBERT BOLAM suggested that there was also the point of view of the locum tenent to be considered. He had known young men pitchforked into work where the sympathy should undoubtedly be theirs rather than that of the practitioner engaging them. To be fair, the Council would have to exercise supervision on both sides. A disclaimer of responsibility at the head of the column would serve no useful purpose, but if members would bring to the attention of the Council any details about advertisements coming from an unsuitable source it would be easy to prevent the insertion of advertisements from that source again. The Council had no mechanism to estimate the capacity of a locum tenent. A man might vary from year to year; capable men might deteriorate and inefficient men, with increasing experience, might improve. Even agents were misled, because practitioners, through a mistaken sense of kindness, would not give an honest opinion of the work of an unsatisfactory locum tenent. The Council were not in a position to set up the necessary scrutiny to give an opinion on those inserting private advertisements. He suggested that Dr. Mackie should be content to know that the matter was continually under review, and that the Council were prepared to be as stringent as they thought it safe to be.—Dr. MACKIE expressed his contentment and withdrew the motion.

Pathological Facilities Provided by Public Health Authorities

In 1928 a resolution was adopted by the Representative Body suggesting that the examinations and reports supplied by public health laboratories could only properly be extended (1) in cases which directly involve questions of public health, or (2) where provision is made for such report by statutory right, or (3) when the patient is stated by the practitioner to be unable to pay a fee. In moving that this minute should be amended Dr. E. H. SNELL (acting chairman of the Public Health Committee) said that since the passing of the Local Government Act of 1929 the work of local authorities had been extended, and the scope of the 1928 resolution required to be altered slightly in consequence; the aim of the new motion was still to protect the interest of private pathologists. In addition to the three classes of case mentioned in the 1928 resolution, patients undergoing treatment at a council hospital were now included as being properly entitled to service from the public health laboratories. The resolution went on to say that, in parts of the country where facilities for pathological examinations were not afforded by private pathologists or the local hospital, the laboratory of the public health authority might properly provide examinations for patients other than those defined, on payment of the usual professional charges for such work; and that efforts should be made to secure that the public health authority, when considering the establishment or development of laboratory facilities, should consult with bodies representative of the medical staffs of the local voluntary hospitals and of the medical profession in the area. The meeting agreed to the substitution of the revised resolution in the policy of the Association.

How to Announce an Intention to Specialise

Dr. ARNOLD LYNDON, chairman of the Ethical Committee, introduced a recommendation of Council, setting out the ways in which a practitioner who intends to specialise may draw the attention of his colleagues to his purpose. The ways suggested were four, namely:

1. By calling upon practitioners already established in the area and giving a personal explanation of his arrangements and plans.

2. By making known his work to his professional neighbours by communications presented to the local division of the B.M.A. or to other medical organisations.
3. By sending reprints of his published work to those practitioners who may be expected to be interested.
4. By sending a sealed postal notification to those practitioners who may be expected to be interested, provided such a communication contains no laudatory allusion to himself or his work, and provided also that no mention is made of any special charges which he proposes to make.

Dr. FLEMMING, criticising section (1) of the recommendations, said that a practitioner paying a visit to announce his intentions to his colleagues was handling a two-edged weapon, and should be given a word of warning.—Dr. LYNDON said that if a man behaved like a commercial traveller on such an occasion he deserved what he got, and the meeting supported this view. Referring to section (2) of the recommendation, Dr. Lyndon said that it was an accepted practice in London for a man to read papers before medical societies on his special subject, and it had received the approval of the leaders of the medical profession.—Dr. J. CLAYRE proposed deletion of this section of the recommendation; he said that the Southampton division disliked the idea of being addressed by someone who was anxious to tell them what he was good for, and Dr. DUNSTAN BREWER felt there was no need to give a man the right to read a paper if the division did not particularly wish to hear it.—Sir ROBERT BOLAM suggested a modification of words, so that section (2) of the recommendation should read: "By communications on professional subjects to the local division of the B.M.A. or to other medical organisations." This, he said, would avoid the suggestion that it was a man's own work which was necessarily to be exploited.

After further discussion section (2) was accepted by the meeting in the amended form, and section (3) was passed without challenge.

Dr. A. B. MURRAY saw no reason why the words "and provided also that no mention is made of any special charges which he proposes to make" should be included in section (4). The practitioners receiving notification would be anxious to know the charges made, for example, by a man specialising in X ray work. He suggested that these words should be deleted.—Sir HENRY BRACKENBURY said that, in the experience of the Ethical Committee, practitioners had sometimes resented receiving communications setting out special charges in detail, but it was true that in certain cases, notably in connexion with X ray or pathological work, it was convenient for the practitioner to receive a list of charges. There was no question of principle involved.—Dr. PETER MACDONALD supported Dr. Murray's suggestion, and thought the inclusion of a charge list could be left to the discretion of the specialist.—Dr. LYNDON saw a possible danger of undercutting; a man might send round a list of charges lower than those of another practitioner in the area, and the situation might degenerate to the level of a Dutch auction.—Dr. G. J. B. CANDLER-HOPE thought that if section (4) was passed without amendment, the pathologist or radiologist who sent out a list of charges would be in danger of being brought up for breach of professional rules.—Mr. N. BISHOP HARMAN also supported the amendment, which was carried.

Sir ROBERT BOLAM proposed that the order of the sections of the recommendation should be altered so that section (4) should become section (2), and this was agreed.—Dr. C. O. HAWTHORNE next suggested that the whole recommendation should be referred back to Council for further consideration. But the meeting was satisfied with its handiwork.

Locum Tenents and their Former Principals

Dr. ARNOLD GREGORY, for Manchester, moved that a section of the report of the Ethical Committee, dealing with the position of locum tenents in relation to their former principals, should be referred back for further consideration and stronger action. The paragraph under discussion mentioned that, in view of the fact that attention was sometimes called to instances in which a locum tenent had set up in practice in opposition to a former principal, the Council had asked agents to bring to the notice of their clients the ruling of the Representative Body of 1925, pointing out their ethical obligation. It was felt that it would be unreasonable to require the preparation of a restrictive bond, except in cases where the locum was engaged over a lengthy period. His division, Dr. Gregory said, did not agree with this view, and felt that the principals were inadequately safeguarded. A locum tenent engaged for more than a definite period of time—say four weeks—should be required to sign a restrictive bond.—Dr. LYNDON thought this suggestion outside the range of practical politics. There was nothing to prevent a principal from insisting on a bond if he wished to have one. The Ethical Committee had merely thought it worth while to suggest to medical agents that they should advise principals to have a bond.—The amendment was lost.

Patenting in the Medical Field

The Representative Body was asked to express four opinions, of which the substance was as follows:

1. That the granting of further patents in the medical field is undesirable in the public interest, and that any action to prevent or regulate such further grant by international agreement would be welcome.
2. That experience has shown that research and discovery have been hindered rather than promoted by the granting of patents for inventions dealing with the following classes of substances: serums, toxins, antigens, viruses, bacteriological products, active principles natural to the animal body, vitamins. The Association considers it desirable that no further patents should be granted for inventions dealing with the manufacture of such substances for use in medicine. The Association would urge an amendment of the law to secure these ends.
3. That the Association is not convinced that the granting of patents for the synthetic preparation of new substances, for use in therapeutics, has been similarly detrimental. It further appreciates the possibility that a purely national abolition of such patents might unjustly penalise commercial enterprise in this country. It would gladly see a mechanism established by which patents for inventions in the medical field, other than those in paragraph (2), could be dedicated to the use of the public in this country, while affording the requisite priority of action in other countries.
4. That until some such dedicatory system is established the special position held by medical men in the community renders it undesirable that they should apply for patents in the medical field.

The CHAIRMAN said that a resolution, should it be passed, would only be an expression of opinion, and not the binding policy of the Association; but it would provide a useful guide during the coming year.

Dr. LYNDON, in moving the adoption of the recommendation, said that a conference, consisting of representatives of the Royal College of Physicians, the Royal College of Surgeons, the Medical Research Council, and the British Medical Association, had met during the year to consider the question of patents, and the opinion of the conference was embodied in the recommendation.[1] There was no question of a penal or ethical character involved; it was only concerned with what was desirable or undesirable in the interests of the public. The Association realised that an international agreement was improbable at the present time. The distinction

[1] See THE LANCET, 1932, i., 1163.

between biological and synthetic chemical products had been arrived at after mature consideration. An example of the disadvantages of the existing system was shown in the case of Prof. Steenbock, of Wisconsin, who obtained a patent for imparting antirachitic properties to foodstuffs by ultra-violet light irradiation. This method was founded on the discovery of other workers, mostly British, but the patent had the effect of controlling the results of previous as well as subsequent work. The discovery of ergosterol, made in the laboratories of the Medical Research Council, quite independently of Steenbock's discovery, made it possible to produce vitamin D in concentrated form by the irradiation of this substance. The manufacture of irradiated ergosterol on a commercial scale, however, had been hindered by claims, made under Steenbock's patent, that it covered all the applications of more definite discoveries made at a later date. Steenbock had transferred his patent to Wisconsin University, which was not averse from deriving profit from a patent, though Steenbock himself had relinquished his claim. A general recourse to patents would be the only method of meeting difficulties of this kind, and would lead in this country to undesirable secrecy.

Sir ERNEST GRAHAM-LITTLE thought the recommendation should be referred back to Council. The Patents and Designs Act had revised and coördinated the position of patents, and Parliament considered that this particular mess had been cleared up for the next 20 years; any appeal for legislation, therefore, would be hopeless for some time to come. This recommendation had been placed before the Government in the hope of getting the principles inserted in the Patents Bill, but they were not accepted. The Solicitor-General, in summing up in June, 1932, said there was no more reason why a man who made a discovery connected with health should be deprived of the fruit of his labour than any other inventor. The dedication of patents was the most important part of the motion as it stood; two years ago the Representative Body had referred back to the Council a scheme concerned with the dedication of patents, and the idea was not favoured in discussion. Some agreement should be reached with the General Medical Council before framing new rules, and he suggested that the motion should be referred back for that purpose.—Dr. R. LANGDON-DOWN said it was not the first occasion on which the Representative Body had been told that because Parliament had passed an Act some proposition ought to be put aside for 20 years, but there was no justification for such pessimism. The Patents and Designs Act was not primarily concerned with the points in which the Association was interested. When the medical secretary went to the Government offices for an interview on this subject he was heard with great interest. Moreover, there was an international commission sitting on the question of patents. It was not a time to refer this recommendation back to Council. What the General Medical Council thought about it was irrelevant; they had only to decide what was infamous conduct in a professional respect, and no one suggested that to take out a patent was infamous. The recommendation only stated, mildly, that it was undesirable. It did not make it necessary, likely, or even possible that a man who took out a patent would be held to be acting contrary to the honour and interests of the profession. Attention was first drawn to the question by the patenting of the Dick test for scarlet fever. In 1929 the Representative Body was asked whether it would support a scheme for the dedication of patents, and referred the suggestion back to Council for further consideration. The Council had opened the door still wider by suggesting that patenting should be considered ethical where the motive was pure, but the Representative Body would have nothing to do with the idea. Owing to the indecision displayed on this question, the Council had sought the opinion of the leaders of the medical profession, and these were embodied in the recommendation. When medical opinion took a general view in one direction the profession should maintain that view, even though it might be hard on individuals.

Mr. H. S. SOUTTAR said that last year he had believed that it should not be considered undesirable for medical men to take out patents. He had changed his opinion on learning that, with only two exceptions, it was the view of every medical man engaged in research in the country that patenting should be regarded as undesirable. The reasons for the distinction between biological and synthetic products deserved some elucidation. Biological products might, in a sense, be regarded as an act of God, while synthetic products demanded human intervention. But, in addition to this, no one had ever made a biological discovery single-handed. Insulin had only been isolated by a series of discoverers; four people took part in its discovery, and Schafer named it without realising its import. It would be absurd for a single man to claim a patent in the biological field. Burroughs Wellcome had recently written to him stating that any action to promote legislation in the sense of this recommendation with regard to biological products would receive the support of the firm, and other reputable firms would doubtless take the same view. It was true that there might be arguments in favour of patenting synthetic products, and for this contingency paragraph (3) made allowance.

Dr. A. J. ORENSTEIN (Cape Western) said that the Representative Body should not commit itself unless to a statement beyond criticism. The products of the animal body, among which for some reason vitamins were included, had been the subject of a distinction in the recommendation. It was true that the Almighty had put vitamins into the carrot and the whale, but to get them out again and prepare them in a concentrated form for use in the tropics was a difficult matter, calling for human intervention. And it was really no less creditable than the act of synthesising a quinidine ring. He thought the Representative Body should wait until an international decision was reached before expressing an opinion. The recommendation as it stood was a curious mixture of internationalism and nationalism. In paragraph (1) it spoke of welcoming international agreement, and in paragraph (3) of securing the requisite priority of action over other countries. This latter was difficult to do, and it was doubtful whether it ought to be done.

Dr. J. S. MANSON should, later, have introduced a motion, on behalf of Warrington, to the effect that the establishment of a dedicatory system for medical patents should provide for the public recognition and reward of private research workers whose contributions to the progress of medical science and practice were accepted as suitable for patenting. He asked and received permission to refer this motion back to Council, being influenced by the remarkable change of view expressed by Mr. Souttar. The question of patenting, he said, had been linked with professional idealism through the centuries, but there was a danger that we might be threatened by a monster of idealism. An eighteenth century illustration of this point was to be found in the story of Dr. Oliver of Bath, who

invented the Bath Oliver. He had disdained to make a profit on his creation, but gave the formula to his coachman—who made a large fortune. Dr. Oliver, presumably, had his reward in the glory which linked his name indissolubly with that of his biscuit; the coachman was the prototype of the dedicatory committee. We could now improve on the customs of the eighteenth century, and the recommendations of the Council indicated how we were to do it.

Dr. R. D. MOTHERSOLE and Mr. DAVID LEES supported the amendment to refer the motion back to Council. Mr. Lees thought the recommendation put the single research worker in a difficult position and jeopardised his interests, whereas it appeared that commercial interests had been largely considered in making the distinction in paragraph (2).—Sir HENRY BRACKENBURY asked the meeting not to refer the recommendations back because it would mean that nothing further could be done for the moment.—Sir ERNEST GRAHAM-LITTLE, in replying, said that the less the compulsion introduced in a matter of this kind the better; it should be left to the good sense of the profession. The Board of Trade Committee did not accept the idea of dedicated patents and it was improbable that legislation would be revised in response to any suggestion.—The meeting, however, preferred not to refer the recommendation back to Council, and turned to the consideration of a new amendment, introduced by Sir HENRY BRACKENBURY; under this the three paragraphs of the recommendation were to be prefaced by the words:—

"The Representative Body adopts the following recommendation of the Council under the heading 'Patenting in the Medical Field,' with its suggestions for the guidance of registered medical practitioners, and asks the Council to continue consideration of the subject."

This amendment was carried.

Payment of Anæsthetists

Dr. HELEN LUKIS, for Kingston-on-Thames, urged that local authorities not paying fees for part-time work according to the scale laid down in the annual report of Council should be pressed to do so. In Surrey the local authority offered one guinea for an anæsthetics session which might entail the giving of as many as 25 gases—a fee of less than 1*s*. per gas. A similar fee was offered for a session for operations on tonsils and adenoids, in spite of the nervous strain and necessary skill demanded of the operator.—Dr. E. H. NASH supported Dr. Lukis, but Dr. J. W. BONE said it was the duty of the local division to press for payment. The central office was ready to do anything in its power to support the division, but it was the business of members in the area to get the local authority to adhere to the scale.—Dr. LUKIS replied that the division had done their best, and were now appealing to the central office for support. Somewhat to the consternation of Dr. Bone the meeting approved the motion; the chairman put the motion a second time and succeded in eliciting a rather stronger response in favour of Dr. Lukis.

Dr. A. J. CLARKE proposed, on behalf of St. Pancras, that the Representative Body should lay it down as a principle that the fee paid to an anæsthetist for a private case should be not less than 20 per cent. of the surgeon's fee. In many cases, he said, it was difficult for the anæsthetist to collect his fee except through the surgeon, and it would be useful if the Association would give some indication of what it ought to be.—Prof. A. H. BURGESS thought that while the anæsthetist was prepared to accept his fee through the surgeon or even, in some cases, through the matron of a nursing home, he could not complain if the patient regarded him as an assistant. He should send in his account to the patient in person.—Mr. BISHOP HARMAN considered the motion was drawn up on an entirely wrong basis. The surgeon received his fee for the operation and after-care, and the anæsthetist for his attendance at the operation. The two things were not related.—Dr. BONE said that the fee should be a matter of arrangement between any practitioner and the patient. There was no reason why the surgeon's and the anæsthetist's fee should be related. The motion was withdrawn.

Road Accidents

Dr. C. F. T. SCOTT introduced, for Willesden, a long motion to the effect that the Representative Body, recognising (1) the alarming increase in the number of road accidents, (2) the growing demand upon medical practitioners to render first-aid medical and surgical treatment to the injured in such circumstances, (3) the infrequency with which any fee is received, and (4) the prevailing idea, believed in by many insurance companies, that the summoning of medical assistance may be ultimately considered as tantamount in law to an "admission of liability," requested the Council to make strong representations to the Government to assume responsibility for the provision of emergency medical attendance and treatment in all road accident cases, and to remove any disability contingent upon the legal point at issue, which rested upon persons insured against accident. Road accidents, Dr. Scott said, were approaching 200,000 per annum, and doctors only received their fee in one out of every five such cases attended. Cottagers at the roadside also suffered, often lending pillows, sheets, or dressings which they never saw again. Motorists were usually insured against third-party risks, but the person driving the car might not be to blame, and the injured person was often not insured. Insurance companies found it difficult to suggest a flat rate, for some people might pay their doctor 5*s*. and some £2 2*s*. Drivers of cars were often convinced that their safest plan after an accident was to do nothing, for if the case came into court a humanitarian act might be regarded as an admission that the driver thought himself guilty.

Mr. MCADAM ECCLES said that the Council was in negotiation with representative insurance companies, but there had been no time yet to report on the results. He was, however, able to lay before the meeting certain points still under consideration. Not all accidents on the road involved damage to human flesh. Last year there were 180,000 accidents all told, and the number was likely to increase, partly because of an increase in the number of vehicles, and partly because of the incompetence of some drivers. Doctors were the only class of persons who could give first-aid efficiently; their early intervention might save the patient suffering, and the insurance company money which would otherwise be spent later on fees for treatment or on compensation for some disability. Moreover, efficient first-aid might save litigation and costs. The bogy that a charge of possible negligence might be substantiated by the fact that first-aid was sought for the injured person must be overcome. The financial difficulty could be met by better coöperation on the part of the insurance companies. Dr. E. R. Fothergill had suggested that if the insurance companies between them were to put up a pool of £10,000 a year, the sum could be used to pay fees to doctors giving first-aid.

Dr. E. H. T. NASH supported the resolution. An analysis of the figures relating to accidents showed that those injured were commonly unable to pay an

adequate fee. In five years there had been 1746 motor accidents in his district, of which 63 had proved fatal. Of car accidents, 60 per cent. occurred in the night; 70 per cent. of accidents involving trade vehicles occurred during the day, and 73 per cent. of motor-cycle accidents during the day. From car accidents, pedestrians were injured in 90 per cent. of cases, and motorists in 10 per cent.; in 77 per cent. of motor-cycle accidents the riders themselves were injured, and in accidents involving trade vehicles 90 per cent. of the injuries occurred to cyclists and pedestrians. Half the accidents in the area were in a single road, and the number had risen from 230 non-fatal accidents in 1926 to 407 non-fatal accidents in 1930.

Dr. E. E. DELISLE GRAY said that in Brighton a system had been arranged whereby every policeman carried a card which he signed and sent to the doctor who was called in. The doctor could then claim a fee of 7*s.* 6*d.* from the local authority for attending the case.—Dr. LUKIS also had her statistics. There were 38 fatal accidents and 1076 non-fatal accidents on the Kingston by-pass last year. The doctor was paid in only 10 per cent. of the cases he was called out to see, and the fee was usually inadequate. The division had estimated the probable value to the doctor of attendance at one such case as follows:—

	£	*s.*	*d.*
To leaving surgery, with possible loss of patients	0	10	6
To cleaning of mud, blood, and grease stains from clothing	0	7	6
To dressings (usually heavy)	0	5	0
To mental trauma, due to anxiety and ingratitude	No charge		
To carrying complete outfit to meet any emergency	No charge		
To loss of time	0	10	6
Total	£1	13	6

The usual fee, if obtained, was 5*s.* 6*d.* She supported the motion.

Dr. E. M. COWELL said that in several recent publications the British Red Cross Society was advising those practising first-aid not to wait for the doctor in many cases, but to arrange for the patient to be taken at once to hospital. It ought to be possible to make better use of those learning first-aid in meeting this problem.—Dr. J. A. PRIDHAM, however, thought that the person who knew first-aid was not always trustworthy; he had seen a trained worker on an ambulance catch hold of a patient's foot and remark: "Doctor—it's broke!" He was right.—Dr. W. PATERSON said that unfortunately the insurance companies consulted had not favoured Dr. Fothergill's idea of a pool. They were convinced that they were paying out on all these cases of accident, but unfortunately the fees did not reach the doctor. Judges should be asked to rule out of consideration the implication that a person was guilty if he helped the injured party by paying the doctor's fee.

Dr. BONE said that Dr. Pridham's experience was unusual; on the whole first-aid was given well by those holding the British Red Cross certificate. In the metropolis accident cases were taken to hospital at once, so that the problem of doctor's fees hardly arose. The Council had written, urging that the Brighton system should be adopted by local authorities elsewhere, and one or two had done so. It had also been suggested that the Royal Automobile Club should undertake to pay these fees, and where their own servant called in a doctor they were willing to accept responsibility, but not otherwise. The insurance companies had flatly declined to establish a pool; they advised a better debt-collecting system, but this was not a very practical suggestion when the patient might live 200 miles away, and probably disclaimed all responsibility. The committee had already spent £250 of the Association's money on this problem and were quite ready to spend more; they were anxious to do something, but nobody knew quite what. The motion was referred to the Council for further consideration.

The Capitation Fee

Dr. H. GUY DAIN (chairman of the Insurance Acts Committee), in moving the adoption of the annual report of Council under "National Health Insurance," said that panel practitioners had felt the east wind of financial depression more severely than any other body. The Council had failed to persuade the Government that a 10 per cent. cut in the capitation fee was equivalent to not less than a 15 per cent. cut in a salary. The work of the insurance practitioner was subject to close public criticism. The smallest dereliction from duty was reported in the press, while the good work of 15,000 other practitioners was lost sight of. Recently there had been undue criticism of panel practitioners in the House of Commons, and the Association were hurt that the Minister of Health had not defended them. Insurance practitioners were servants of the Government, and should have the protection of the Department when unjustly attacked. The Committee still disapproved of the limitations to change of doctor, but had not so far been able to persuade the administration that the time was ripe for another alteration of the regulations.

Dr. ERNEST WARD (Torquay) moved that the Council be asked to expedite the report of the special subcommittee investigating the adequacy of the capitation fee, but Dr. DAIN thought that it was more important that the information should be obtained in full from panel practitioners than that the report should be hastily compiled. The information must come from the doctors themselves, and it was important that the report should be sound. The motion was withdrawn.

Other deliberations of the Representative Body will be reported in the next issue of THE LANCET.

ANNUAL GENERAL MEETING

On Saturday, July 23rd, the retiring President, Dr. W. G. Willoughby, relinquished the chair to Lord Dawson of Penn. Lord DAWSON said that there could not be a greater or more acceptable honour than to be made president of the Association in its centenary year. He welcomed the representatives present and spoke of the early days of the Association, when the clinical thermometer was a foot long, and the doctor's usual means of transport was the horse. He introduced to the meeting Prof. T. G. Moorhead, president-elect for 1933–34.

Presentation to Dr. Alfred Cox

An extraordinary general meeting followed, at which Sir HUMPHRY ROLLESTON took the chair, for the purpose of making a presentation to Dr. Alfred Cox, the retiring medical secretary of the Association. All members, Sir Humphry said, shared a deep respect and affection for Dr. Cox, who had watched over the Association for more than a quarter of a century, and who had been medical secretary for 20 years. His simplicity of character was all the more remarkable for being coupled with his astuteness of mind. A portrait of him by Sir

Alfred Cope, R.A., was to hang in the Association's House. Sir EWEN MACLEAN presented Dr. Cox with a book containing the names of those who had contributed to the presentation, and a cheque for £1000. He recounted some of Dr. Cox's achievements during his years of office, including his visit to South Africa, as a result of which two separate medical organisations had agreed to sink their differences under the ægis of the British Medical Association.

Dr. COX said he found so much kindness harder to deal with than he had ever found criticism. He could recognise himself in his portrait, but not so easily in the picture Sir Humphry and Sir Ewen had drawn of him. The Association had been far more to him than a means of livelihood, and he liked to think he had had something to do with widening its imperial outlook.

CELEBRATIONS AT WORCESTER

On Sunday about 400 members and delegates of the Association travelled by special train to Worcester, where they were joined by medical men from the surrounding counties. First they gathered, with the mayor and many of the local inhabitants, below the house in Foregate-street where Sir Charles Hastings formerly lived. Presently Dr. W. G. Willoughby, the retiring president, appeared at a first-floor window, and in simple terms addressed the gathering on the achievements of this citizen of Worcester. When he had unveiled a memorial tablet on the wall of the house, the members proceeded to robe at the College Hall and formed a procession from the Guildhall. This reached the Cathedral at 12 o'clock, preceded by the mayor and corporation with their officers. For the commemoration service the building was filled with people, and the special service proved impressive. The lesson, from Ecclesiasticus xxxviii. ("Honour a physician with the honour due unto him for the uses which ye may have of him: for the Lord hath created him"), was finely read by Lord Dawson, the president, who then unveiled a memorial window to Sir Charles Hastings, the gift of the Association to Worcester Cathedral.

In his sermon the Bishop of Birmingham began by speaking of Hastings's insight and conviction. To-day the visions which he saw had largely become facts; medical research was not only well organised but was subsidised by the State, and accredited teachers encouraged the hope that every decade would mean a great increase in the power to control disease. The past, however, conveyed a warning. The Dark Ages had succeeded the teaching of Hippocrates. It could not be assumed that advance would be continuous. New aspects of truth often bewildered men and aroused their instinctive opposition; so bewildered, they easily turned to old superstition slightly disguised, and often invoked religious sanctions in defence of prejudices. Mediæval religious prejudice had made dissection of the human body virtually impossible, and who could say that all the present objection to the sterilisation of the feeble-minded rested upon defensible scientific doubt? After speaking of the opposition to vaccination and experiments on animals, Dr. Barnes concluded by emphasising the paramount importance of the search for truth and the necessity for modifying all doctrine which that search invalidated.

After the service, luncheon was served on College Green. Dr. Henry Neville Crowe, chairman of the Worcester division, presided, and referred to the presence of his father, Dr. George Wyndham Crowe, who had acted as honorary secretary at the jubilee meeting in Worcester in 1882. On behalf of the Worcester branch he then presented to the Association the original portrait of Sir Charles Hastings, painted by B. R. Faulkner in 1839. This has been generously given to the branch by Mr. W. G. W. Hastings, grandson of the founder and present head of the family. Lord Dawson, in accepting the picture, spoke of the historical associations of Worcester and of that "ancestral glory which is a lamp to posterity." Sir Henry Brackenbury proposed the toast of the City of Worcester and the Memory of Sir Charles Hastings. Replies were made by the mayor (Miss Diana Ogilvy) and Mr. Hastings.

In the afternoon a reception was held at the Guildhall. A large party of members and their friends visited Droitwich, where they saw the rapidly developing facilities for the treatment of rheumatism and other disorders by the natural brine of the locality. Visits were also paid to the Besford Court Catholic Mental Hospital and Training College and to the Worcester porcelain works.

THE PRESIDENT'S RECEPTION

The President and Lady Dawson of Penn held a reception at the Albert Hall on Tuesday, July 26th, of a remarkable character; it reflected the size and influence of the Association, and emphasised in striking manner the hospitality with which overseas visitors are being received. The reception started punctually at 9 P.M., and for over an hour doctors in the full panoply of degrees obtained in every quarter of the globe defiled before the President and Lady Dawson to receive the personal welcome extended to them, their wives, daughters, and friends. Every box in the enormous amphitheatre was soon occupied by parties, and by 11 o'clock the area round the central bandstand was cleared, when the floor was promptly covered with a highly coloured moving mass. The organisation was so good that in spite of the crowd there was ample room to dance, while profuse refreshments were to be found at convenient places, and promptly were found.

Shortly before midnight one end of the hall was cleared, and two portraits, that of Sir Charles Hastings and that of Dr. Alfred Cox, were shown on a screen. The portrait of Dr. Cox, by Sir Alfred Cope, was then received formally by the President on behalf of the Association as a gift from the subscribers, and its value as a likeness was tested and approved when the subject stood beneath his portrait.

At midnight a pageant displayed in an effective manner the progress of medicine during the past century. In front of a curtain stood four historic statues, Æsculapius, Pythagoras, Hippocrates, and Galen. Before them there marched, in more or less chronological order, led by Sir Charles Hastings, the following typical leaders: Astley Cooper, James Syme, Robert Knox, William Lawrence, Thomas Addison, Richard Bright, Robert Graves, James Young Simpson, James Paget, William Jenner, Joseph Lister, Louis Pasteur, Jonathan Hutchinson, Spencer Wells, Thomas Wakley, Ernest Hart, Richard Owen, Thomas Huxley, William Bowman, Joseph Toynbee, Morell Mackenzie, Hughlings Jackson, William Gowers, Victor Horsley, Erasmus Wilson, Elizabeth Garrett Anderson, Patrick Manson, David Livingstone, William Osler, and Clifford Allbutt. The characters in this procession were taken by members of the theatrical societies of the various London medical schools, and the procession was

interspersed with groups of nurses from the great London hospitals. The procession, as it passed in front of the fathers of medicine to the back of the curtain was cleverly arranged there as a transformation scene, over which a flamboyant goddess of progress was seen to be presiding when the curtain was drawn back. The night closed with a cabaret show and more dancing.

THE IRISH MEDICAL GRADUATES ASSOCIATION

A luncheon was given on Wednesday, July 27th, at the Criterion Restaurant, by this Association in connexion with the Centenary of the British Medical Association, when Dr. Howard Humphris presided over a large company. The toast of the guests was proposed briefly by Dr. Humphris and replied to by Lord Moynihan in an amusing speech in which he set out the salient points of the Irish character in comparison with the English and especially with the American. The toast of Prosperity to the Association was proposed by Sir Squire Sprigge who coupled with it the name of Sir William Wheeler. Replying, Sir William Wheeler, incidentally mentioning that devoted son of Ireland though he was he was proposing to live in London, set out the purposes of the I.M.G.A in appropriate terms. The speaking was made deliberately short, for all the men, and some of the women, in the room had engagements in connexion with the B.M.A. Centenary; the function, however, was very successful.

SOCIETY OF APOTHECARIES OF LONDON

A dinner was held by the Society in their Hall on Monday, July 25th, in celebration of the centenary of the British Medical Association, when the Deputy Master, Lieut.-Colonel C. T. Samman, presided over a large assembly of representative guests. After the loyal toasts the Deputy Master proposed in highly congratulatory terms Prosperity to the Association, coupling with the toast the name of Dr. W. G. Willoughby, the past president. Dr. Willoughby, in reply, said that in a body like the Association the officials did the real work, and he referred eloquently to the loss sustained by the retirement of Dr. Alfred Cox. Dr. Willoughby believed that he was the only M.O.H. who had presided over the Association, but he thought that the founder, Sir Charles Hastings, with his broad outlook on all public health questions, would have proved the Sir George Newman of his day. He concluded with an amusing apology to his brother, Dr. W. M. Willoughby, the M.O.H. for the City of London, for making speeches in his diocese.

The senior warden, Dr. Cecil Wall, then presented Lord Dawson of Penn, the president of the Association, to receive the honorary freedom of the Society. He explained the evolution of the Society from the Grocers Company, and said that, although a medical corporation, it preserved its rites as a City Company and jealously guarded its offer of "freedom by gift," which was the highest honour at its disposal. Lord Dawson, in accepting the freedom, paid an eloquent tribute to the hundred years of progress of the Association, and said that it was as their figurehead he was receiving the honour from the Apothecaries Society. He reviewed the history of domestic medicine as it existed in the 17th century, and as later it was largely carried on by the Society of Apothecaries, an illustration of the evolution of medicine.

Sir William Willcox then presented Sir Henry Dale to receive the Society's gold medal for therapeutics, when Dr. Dale, in a speech of thanks, rejected the description of himself as a therapeutist, saying, however, that medical research must be carried on in association with clinical medicine and not segregated in the laboratory.

Dr. J. S. Fairbairn presented Mr. Comyns Berkeley and Prof. Chipman, of Montreal, for honorary admission to the Mastery of Midwifery, after which the toast of the guests was proposed by the senior warden, who alluded to the representative character of the assembly and especially the long list of foreign delegates. Sir Henry Newland and Prof. Alexander Primrose briefly replied.

PANEL PRACTICE

Is the Choice of Drugs Restricted?

A hospital physician, who teaches his students that bromide is useless in many cases of epilepsy where luminal is effective, tells us that his students come back to him a year or two later from panel practice saying that if they want to give their patients luminal they have to pay for it themselves. On the other hand, we know that insured persons are obtaining luminal on national health insurance prescriptions without surcharge. Under the regulations an insurance practitioner is entitled to order for a patient on his panel any drug which he thinks is necessary for the treatment of his case, together with certain appliances which are set out in a particular list. The cost of these prescriptions is met out of the drug fund, and any chemist under contract with the insurance committee is bound to supply the patient with what is ordered on the prescription free of charge. When that prescription comes to the pricing staff of the insurance committee there may be something on it which is thought not to be a proper charge on the fund, for example, diabetic bread or ice. The practitioner is then advised that the charge for these substances will be recovered from his remuneration. He has the option of appeal to the panel committee which forwards its decision to the insurance committee and to the Ministry of Health, which has the right to set up a court of referees to decide the matter if it disagrees with the panel committee's decision. This has recently been done with regard to thermogene wool, which the panel committee decided was a proper charge on the drug fund, and the court of referees decided was not. For the guidance of practitioners and of the pricing staffs, the Ministry has set up a central advisory committee upon drugs, which has issued lists of substances classed according to whether they are in the committee's opinion:

CLASS A.—*Never drugs*: e.g., brandy, casumen, cane sugar, panopeptone.

CLASS B 2.—*Always drugs*, but such that in the event of a practitioner prescribing them he might reasonably be called upon to justify the prescription: e.g., Fellows' syrup, formamint tablets, metatone.

CLASS B 3.—Proprietary substances and preparations, which are alleged to be drugs or medicines, but of which the compositives is undisclosed, the prescribing of which is justified only in the most exceptional circumstances.

CLASS C 1 and C 2.—Substances and preparations which may be but are not always drugs or medicines, for the purpose of medical benefit. *Examples of C 1*: Cod-liver oil, extract of malt, malt and oil, which it is stated are really foods, but by usage have long been considered as drugs. *Examples of C 2*: hæmatogen, Scott's emulsion, resinol soap.

The prescribing of a practitioner is only investigated if the cost of his prescriptions over a period of months is very definitely over the areal average. Whilst a practitioner is not allowed to experiment with new and expensive drugs on his panel patients at the cost of the public funds, he is within wide limits allowed to prescribe whatever he feels necessary. But he must be prepared to justify his prescribing in the event of an investigation.

CORRESPONDENCE

THE INCREASE IN CANCER OF THE LUNG

To the Editor of THE LANCET

SIR,—In an annotation which appeared in THE LANCET of Jan. 23rd (p. 200) I was criticised for dwelling in my article on bronchiogenic carcinoma, too long on "histogenesis and metastases" and not long enough on "diagnosis," for which, in your opinion, the "average medical reader" would be grateful. Those who have read my paper have noticed that of 125 pages (excluding references), 28 were given to a discussion on diagnosis.[1] Then, too, it is superfluous to stress the fact that the knowledge of metastases as they occur in this "new disease," and the understanding of the histogenesis of this condition are not only of a theoretical interest but are of practical importance to the "average medical reader" in the recognition of various manifestations of this malady.

But judging from the recent discussion in your correspondence columns, the British "average medical reader," too, is apparently interested not only in the mundane question of diagnosis but also in "high-brow" cancer problems, for instance: whether the increase in bronchiogenic cancer is real or only apparent; whether smoke, dust, and tarry roads played or play a rôle in the alleged increase of this malignant condition of the respiratory organs. My views on this phase of the problem were discussed at some length in a previous publication referred to. The excellent letter by Dr. J. A. Struthers (whose ideas are in accord with those expressed by me), published in THE LANCET of June 18th (p. 1330), adds a new note to the question, which will be of particular interest to those interested in cancer statistics.

The statement in your leading article of June 4th (p. 1207), "that practically all observers find cancer of the lung to be pre-eminently a disease of men" is not altogether exact. In an analysis of 1807 bronchial cancers, Breckwold found that 807 patients were males and 280 were females. Ferenczy and Matolczy's figures show 204 males and 78 females, while Bierbefield's statistics reveal 154 males and 53 females. My observation is to the effect that on the average it occurs in women in about 30 per cent. of cases. That this phenomenon is related to cigarette smoking, as suggested in your article, is very doubtful. The prevalence of the disease in men may rather be explained on the basis that the male sex, being more exposed to pulmonary diseases in general, is likewise more prone to acquire a malignant disease of these organs. The fact that numerically the male population in the hospital exceeds that of the female is likely also to play a rôle in the uneven distribution of the disease between the two sexes. Finally, it may also be due to the fact that in the female sex the genital organs are the more common seat of a cancer. This is of importance in that the more frequent development of carcinoma of these organs, which occur at an earlier age among women, protects them against a bronchiogenic cancer, either by causing death of the patient before the pulmonary cancer has had time to develop, or possibly by creating a virtual "immunity" or resistance to the development of a new cancer.

It is unfortunate that the tendency is still prevalent to stress alleged carcinogenic substances which are too often imaginary, and wholly disregard the host as a factor in the genesis of carcinoma and other malignant diseases.

I am, Sir, yours faithfully,

B. M. FRIED, M.D.

Boston, Massachusetts, U.S.A., July 8th, 1932.

[1] In my monograph which appeared somewhat later (Williams and Wilkins Co., Baltimore, 1932), 102 more pages of a clinical nature were added.

"SECRETION OF MUCUS BY THE TRACHEA"

To the Editor of THE LANCET

SIR,—Dr. Auld's letter prompts me to record the following case. I recently removed through a bronchoscope a small tumour, consisting of organised granulation tissue covered by a transitional epithelium, from the lower right bronchus of a girl 20 years of age. She was under the care of Dr. Batty Shaw at University College Hospital, and had had several attacks of acute inflammation of the right lung. Air entry was deficient into the right lower lobe, and a lipiodol injection failed to enter this lobe. Subsequently, the air entry was restored, and a further bronchoscopic examination showed nothing abnormal present.

I am, Sir, yours faithfully,

HAROLD KISCH.

Wimpole-street, W., July 25th, 1932.

TREATMENT OF PSORIASIS BY CIGNOLIN

To the Editor of THE LANCET

SIR,—An annotation in your issue of Oct. 3rd, 1931 (p. 754) prompted me to try the treatment of psoriasis with cignolin. Starting with the formula as given in that number:—

℞

Ol. cadini (deod)	♏40
Cignolini	gr. ½
Benzol. rect.	ad ℥

I obtained results which although better than those obtained with chrysarobin were not markedly so. It appeared to me that the cignolin was being used in much too small a concentration if an attempt were to be made to clear up the condition rapidly.

I have adopted the following technique with most excellent results. In the case of male patients, cignolin was prescribed in ointment form:—

℞

Cignolini	grs. x
Paraff. moll.	ad ℥

and the patient was instructed to smear a little on a piece of lint, and then to rub it vigorously and well into the patches, a timed ten minutes to be spent in the inunction of each area, thus ten minutes would be spent on an elbow, ten minutes on a shin. A moderate inflammatory reaction is both to be desired and expected. The normal skin becomes pigmented light brown in colour, on which the patches of psoriasis stand out dark brown. Usually, after three or four inunctions (the inunction being done once a day) all the scales have disappeared and the use of the ointment may be discontinued. The removal of the pigmentation is all that now remains to be done, and this process is hastened by rubbing well with olive oil.

I find that the majority of my cases were clear of both patches and pigmentation in from 10 to 14 days of the commencement of treatment. The patient must be seen after the first application so as to ensure that too great a reaction is not being obtained. In one

case I have had to increase the proportion of cignolin, and in a few cases to cut it down somewhat, but most males do well on the above formula. In women it is not advisable to start with more than grs. 5 of cignolin to the ounce and this usually suffices. For the scalp I use the same ointment as for the body, but for the face I find it advisable, in both male and female cases, to use the cignolin in only half the concentration that is being used on the skin elsewhere.

By the above method I was even able to clear up two bad cases of psoriasis, one of which had existed for 30 years and the other for 27. Both of these cases had been under treatment, on and off, during the periods mentioned, but in spite of their having been treated vigorously by chrysarobin and other methods, neither had ever been completely free from psoriasitic patches. The one was absolutely clear of both patches and pigmentation in 13 days from the commencement of treatment, and the other in 18 days. In fact, I have yet to meet a case which will not respond. The patient, of course, will be subject to further outbreaks, but these can usually be aborted quite easily by one application of the ointment.

The drug is a preparation of Messrs. Bayer, and is said to be chemically di-oxy-anthranol and might therefore be described as chrysarobin minus a methyl group. It is three to five times stronger than chrysarobin.

I have to thank Dr. H. M. Hanschell for the opportunity of treating many of these cases.

I am, Sir, yours faithfully,

H. WOLFE COWEN,
Late R.M.O. Seamen's Hospital, Royal Albert and Victoria Docks.

Amhurst Park, N. 16, July 25th, 1932.

*** The formula to which Dr. Cowen refers was one-tenth the strength used in the Budapest clinic where it was introduced, as it seemed better to start on the safe side with an unfamiliar drug. A supplementary note in our issue of Oct. 17th, 1931 (p. 882) suggested increase of the amount if the formula proved ineffective.—ED. L.

A CORONER'S CRITICISM

To the Editor of THE LANCET

SIR,—In reading the commentary under this head in your issue of July 23rd (p. 206) on the report of an inquest following a death at the Evelina Hospital for Children, certain sentences attracted my attention.

> "The complete deliberate removal of tonsils as carried out to-day requires an absence of all gagging and a perfectly immobile pharynx, and this implies a degree of narcosis in which the laryngeal reflex is always abolished. In the days when the tonsils were removed speedily a much lighter anæsthesia was all that was needed. . . The advance of knowledge with regard to this particular operation has led to a complete instead of an incomplete removal of the offending tonsil. Complete removal of tonsils cannot be properly carried out without a degree of narcosis that involves abolition of the laryngeal reflex. . . Before (the critic) denounces the modern operation he would be well advised to do a little follow-up work on his hundreds of patients, and find out how many of them have had to undergo a second operation for removal of portions of tonsil he left behind."

To my mind this teaching is disastrous. In the first place, while it is true that it takes far longer to attain mastery of blunt-guillotine dissection technique than of "deliberate" methods, the removal of the tonsils in the hands of an experienced operator can be and should be as complete by the former as by the latter procedure. My own follow-up has shown under one-half per cent. of patients in whom removal was incomplete: all noted at the time of operation, and all cases of small adherent tonsils that really required rather longer than the half minute afforded by ethyl-chloride anæsthesia. But with an experience of some thousands of "deliberate" dissections, I should be horrified if I thought that in any case the laryngeal reflex was abolished. We absolutely forbid preliminary morphine, lest this reflex should be diminished; and not a single whiff of chloroform is allowed even with robust adults, open ether being the anæsthetic employed. It is only the beginner who requires "deep" anæsthesia for slow dissection. One prefers of course that the patient should not be too active, but provided the mouth can be opened with a gag, and the head held still, a complete dissection can be rapidly and satisfactorily carried out with the patient gagging, able to cough, and indeed almost talking!

I plead earnestly that for tonsillectomy by whatever method light anæsthesia should be the rule, instead of "impossible."

I am, Sir, yours faithfully,

Bristol, July 23rd, 1932. E. WATSON WILLIAMS.

SERUM TREATMENT OF PNEUMONIA

To the Editor of THE LANCET.

SIR,—We are indebted to Dr. Leys for drawing attention to some omissions in our second paper on the treatment of lobar pneumonia by Felton's serum. With regard to questions 1–4, we would refer him to THE LANCET, 1930, i., 1387. With regard to question 5, our patients were suffering from lobar pneumonia due to a pneumococcus infection. No cases of streptococcic or staphylococcic pneumonia have been included. With regard to question 6, we have used Felton's serum, as stated, "at our discretion." In 16 cases its exhibition seemed to us to be unnecessary. All these patients recovered. In two cases, humanity dictated that moribund patients should not be distressed unnecessarily. The inclusion of these cases in the "serum" series would have slightly reduced the "percentage mortality" of Type I cases, and slightly increased the "percentage mortality" of Type II cases. We are, Sir, yours faithfully,

JOHN COWAN,
A. W. HARRINGTON.

Glasgow, July 25th, 1932.

NEW THEATRE AT ST. BARTHOLOMEW'S HOSPITAL.—A new theatre for the ear and throat department was opened last week. The cost of adaptation and equipment has been borne by the staffs of the *Times* and the *Times* Book Club.

PRINCESS ALICE MEMORIAL HOSPITAL, EASTBOURNE. July 5th was the fiftieth anniversary of this large hospital. The sum of £30,000, of which £28,500 has already been raised, has just been spent on extensions which were opened on July 6th by Lady Hartington. The large gathering included Dr. Henry Colgate and Dr. Henry Habgood, who were among the first members of the medical staff. The extensions have been made possible by Mr. and Mrs. Norman Holland, who gave the children's block and the equipment, and Miss Wilson, who gave £5000. Mr. T. Arno offered £3000 on condition that £25,000 was raised before the Prince of Wales laid the foundation-stone last year. Mr. Arno later gave £10,000 to endow the beds in the ward to be named after him. The extensions comprise the Arno ward, two additional wards, accommodation for the staff, casualty block, X ray room, dispensary, and pathological laboratory. Speaking at the luncheon, Lord Hartington said that the task of keeping up the hospital was not going to be an easy one, but if the governors used their energies to bring home to the people the needs of the hospital, the increased income which would be necessary would be forthcoming. "If we let the voluntary hospitals down," he added, "and they were taken over by the municipalities, we should lose something very valuable in our national life."

MEDICAL NEWS

University of Oxford

On July 17th the following degrees were conferred:—

D.M.—O. L. V. de Wesselow.

B.M.—H. G. N. Cooper, D. G. Ferriman, E. Braithwaite, J. A. Nunn, W. S. Tegner, S. W. T. Bentall, P. M. F. Bishop, E. J. Williams, and F. W. Brown.

University of Cambridge

On July 23rd the following degrees were conferred:—

M.D.—J. W. Hope Simpson and H. L. Wilson.

M.B. & B.Chir.—H. R. Thompson and A. W. Vaisey.

B.Chir.—R. A. Ratcliff, A. N. McCrea, and W. H. Gabb (by proxy); W. O. M. Ede, W. H. G. Jessop, J. W. Cope, T. C. Gipson, R. V. F. Mercer, J. Bishop Harman, M. L. Rosenheim, G. J. Meikle, J. M. Vaizey, H. M. Chappel, T. D. Day, K. V. Earle, P. W. Hutton, Frank Radcliffe, Benjamin Holden, R. A. Jones, Garthowen Williams, S. H. B. Platts, P. McI. Smyth, and A. S. Herington.

At recent examinations the following candidates were successful:—

D.M.R.E.

Part II.—Margaret A. Bromhall, A. C. Devaraj, Nathaniel Fram, E. D. G. Gillies, C. H. Hilliard, R. F. Innes, C. B. Jennings, S. D. Kilner, W. K. Morrison, S. A. Nagga, and A. B. Sullivan.

University of London

At a meeting of the Senate on July 20th, Dr. E. Weston Hurst was appointed to a university readership in experimental pathology, tenable at the Lister Institute of Preventive Medicine, and Mr. J. W. B. Cook, D.Sc., to a university readership in pathological chemistry, tenable at the Cancer Hospital. Dr. Hurst was formerly pathologist to the Millbank Research Fund at the Lister Institute, and Dr. Cook has since 1929 been research chemist in the Research Institute of the Cancer Hospital.

The Geoffrey E. Duveen travelling studentship in oto-rhino-laryngology, of the value of £450, was awarded for 1932 to Mr. G. H. Livingstone, F.R.C.S.

At recent examinations the following candidates were successful:—

M.S.

Branch I. (Surgery).—R. K. Bowes, Univ. of Liverpool and St. Thomas's Hosp.; R. C. Brock, Guy's Hosp.; Philippa P. Martin, Univ. College Hosp.; R. T. Payne, St. Bart.'s Hosp.; and J. W. G. Phillips, St. Mary's Hosp.

DIPLOMA IN BACTERIOLOGY

D. N. Chatterji, R. S. F. Hennessey, Kamakhyaprosad Kundu, M. M. Muers, E. J. Pullinger, Betty Richards, Julius Sigurjonsson, H. W. Y. Taylor, P. S. Watts, R. C. Wright, Mahomed Yacob, and H. S. Yusef.

University of Edinburgh

On July 20th the following degrees and diplomas were conferred:—

M.D.—G. W. Ancrum, ‡R. G. Anderson, J. B. Baynash, *J. D. S. Cameron, G. A. Dunlop, ‡E. L. Farquharson, Richard Mennie, ‡A. M. Moll, W. J. Mowat, †R. F. Ogilvie, G. J. Roberts, S. S. Rosebery (in absentiâ), *W. R. Russell, and J. M. Watt.

* Awarded Gold Medal for Thesis. † Highly Commended for Thesis. ‡ Commended for Thesis.

Ph.D.—E. A. Michael (in absentiâ).

M.B., Ch.B.—H. T. H. Arnott, J. T. Baldwin, Duncan Ballantine, §G. W. Bathgate, §J. A. Baty, A. R. Bazin, G. B. Bigelow, C. G. Binns, H. R. Blum, J. W. Brydon, Chi-To Chan, C. C. Clarke, H. H. Corrigall, D. S. Cownie, C. L. Crawford, A. P. Cronjé, J. R. Davidson, Hilda M. Denholm-Young, T. M. J. d'Offay, I. H. Egelman, Janet M. S. Elder, J. K. Elliott, Ronald Elsdon-Dew, H. A. Forrester, B. B. Freshwater, S. J. Frewin, A. J. Galbraith, G. C. Glennie, William Gray, C. A. Green, Lydia M. Grey, R. B. Gullison, S. W. Hirschmann, J. C. Hislop, Christopher Hotson, W. D. Hyde, E. A. Jack, Jessie A. T. Johnston, J. M'K. Johnstone, H. M. Lamprecht, Joan Lassetter, Alexander Lawrie, G. A. Lawson, George Leventhal, Louis Levin, Olive H. Lewis, Leon Littman, E. L. Lloyd, J. B. F. L. Luke, J. S. Lyle, Joan M. MacDonald, Jean M'Dowall, James Macfarlane, W. V. Macfarlane, D. F. M'Gregor, Graham Macpherson, Caesar Mandelbaum, Isobel M. S. Marshall, Mary G. Masterton, Jean Mather, I. H. Matheson, G. D. Matthew, Alexander Menzies, A. R. M. Moir, A. B. Monro, Augusta S. Monro, J. W. Morgenthal, Hugh Morrison, I. C. C. Morrison, Helen H. M. Muir, J. A. Nicholson, E. B. Nicol, S. E. Onwu, A. D. Osborn, S. S. Ovanessoff, H. D. Palmer, Harold Park, §James Patrick, F. W. Paul, R. C. M. Pearson, Robert Porteous, R. W. G. Ransome-Wallis, §Meyer Rassin, F. H. Reeder, Benjamin Resnick, Struan Robertson, Sheilah R. Ross, G. A. Rubin, H. N. Runsdorf, G. L. Russell, T. E. Rutter, R. L. de C. H. Saunders, §Harold Scarborough, R. T. Sharp, H. M. D. Shepherd, Charles Sokolove, Joseph Spanbock, N. G. Steere, J. B. Stewart, Pauline W. M. C. Stirling, I. D. Sutherland, Hon-Sham Tai, R. H. Tait, Constance L. Taylor, Alun Thomas, A. E. Turnbull, James Urquhart, A. E. P. Vanier, H. A. Vickers, S. E. Watov, Hilda Watson, Winifrede M. Watson, W. D. Weiss, P. R. Wentzel, L. J. Wigston, J. I. Williams, W. H. F. Wilson, R. C. Wood, and C. B. Woodman.

§ With honours.

D.P.H.—J. A. Cuthbert, Samuel Harvey, J. P. M'Gibbon, and Alexander Thomson.

D.T.M. and H.—C. E. S. Bailey and G. L. Chaudhuri (in absentiâ).

Diploma in Radiology.—Cyril Bellamy, J. T. M. Fenton-Fyffe, Margaret Findlay (in absentiâ), and R. A. K. Harper.

The following awards were made: Thesis Gold Medal, J. D. S. Cameron, M.D., and W. R. Russell, M.D.; Stark Scholarship in Clinical Medicine, J. G. M. Hamilton, M.B.; Gunning Victoria Jubilee Prize in Materia Medica, Robert Gaddie, Ph.D.; Gunning Victoria Jubilee Prize in Forensic Medicine, Jean D. Robertson, B.Sc.; Gunning Victoria Jubilee Prize in Midwifery, R. J. Kellar, M.B.; Lauder Brunton Prize in Pharmacology and Therapeutics, I. A. G. L. Dick, M.B.; Ettles Scholarship and Leslie Gold Medal, J. A. Baty, M.B.; Allan Fellowship in Clinical Medicine and Clinical Surgery, James Patrick, M.B.; Mouat Scholarship in the Practice of Physic, J. A. Baty, M.B.; Buchanan Scholarship in Midwifery and Gynæcology, Graham Macpherson, M.B.; James Scott Scholarship in Midwifery and Gynæcology, Mary G. Masterton, M.B.; Beaney Prize in Anatomy and Surgery, Harold Scarborough, M.B.; Conan Doyle Prize, Ronald Elsdon-Dew, M.B.; Annandale Gold Medal in Clinical Surgery, James Patrick, M.B.; Murdoch Brown Silver Medal in Clinical Medicine, Meyer Rassin, M.B.; Royal Victoria Hospital Tuberculosis Trust Gold Medal, Robert Porteous, M.B.; Scottish Association for Medical Education of Women Prize, Mary G. Masterton, M.B.; Dorothy Gilfillan Memorial Prize, Mary G. Masterton, M.B.; Wightman Prize in Clinical Medicine, Ian Mackenzie; Pattison Prize in Clinical Surgery, James Patrick, M.B.; Sir Robert Jones Prize in Orthopædic Surgery, James Macfarlane, B.Com., M.B.; Cunningham Memorial Medal and Prize in Anatomy, M. R. Ewing; Whiteside Bruce Bursary, Nancy H. Turnbull.

The Cameron Prize in Practical Therapeutics has been awarded to Dr. Edward Mellanby, professor of pharmacology in the University of Sheffield, in recognition of his discoveries regarding the therapeutic actions of the fat-soluble vitamins.

Royal College of Surgeons of Edinburgh

At a meeting on July 22nd, with Mr. J. W. Dowden, the president, in the chair, Lord Moynihan was elected an honorary Fellow of the College.

At a recent meeting of the College, with Mr. John Wheeler Dowden, the president, in the chair, the following 17 successful candidates out of 67 entered, who passed the requisite examinations between March 17th and 24th, were admitted as Fellows:—

George Haythorne Bradshaw, M.R.C.S. Eng.; Edward Stanley Bolton, M.B. Camb.; Hugh Charles Callagher, M.B. Melb.; Gordon Bertram Campbell, M.B. N.Z.; James Crabb Clark, M.B. Edin.; Thomas Alexander Clarke, M.D. Liverp.; Morris Myer Datnow, M.D. Liverp.; William James Eastwood, M.B. Liverp.; Karl Marx Hairman, M.B. Witwatersrand; Cecil Wentworth Harris, M.B. Sydney; Thomas Norman Arthur Jeffcoate, M.B. Liverp.; Andrew Logan, M.B. St. And.; Denis Paul McIntyre, L.R.C.P. Edin.; Richard de Soldenhoff, M.B. Edin.; Robert Traquair Thin, M.B. Edin.; Alexander Kirk Wilson, M.B. Liverp.; and Alexander Dewar Williamson, M.B. Glasg.

University of Manchester

Dr. G. E. Loveday, who is at present lecturer in clinical pathology in the University, has been appointed to a readership in that subject. Dr. W. D. Hood has been appointed lecturer in factory hygiene; Dr. T. S. Heslop, demonstrator in anatomy; and Dr. E. A. Gerrard, demonstrator in obstetrics and gynæcology.

International League Against Rheumatism

The third international congress of the Ligue Internationale contre le Rhumatisme will be held in Paris from Oct. 13th–15th, under the presidency of Dr. R. Fortescue Fox (London). The subjects to be considered include the Early Symptoms of Chronic Rheumatism, Rheumatism and Tuberculosis, and Rheumatism and the Medical Profession. After the congress there will be an opportunity of visiting various health resorts in France which specialise in the treatment of this disease. Particulars may be obtained from Dr. J. van Breemen at the headquarters of the League, Keizersgracht 489, Amsterdam, or (in France) from Dr. M. P. Weil, 60, Rue de Londres, Paris, IX.

Medical Society of London

The programme for the first half of the 160th session opens with the annual general meeting at 8 P.M., on Monday, Oct. 10th, after which, at 8.30 P.M., Sir John Broadbent will give a presidential address on Recent Advances in our knowledge as to the Ætiology and Treatment of some of the Acute Infective Fevers. Subjects for the fortnightly Monday evening discussions are as follows: Oct. 24th, Fractures of the Lower Jaw, to be introduced by Mr. W. Warwick James and Sir Harold Gillies; Nov. 28th, Use and Abuse of Massage (Dr. A. H. Douthwaite and Mr. Gwynne Williams); Dec. 12th, Skin Tests in Tuberculosis and Exanthemata (Dr. R. A. O'Brien and Dr. William Gunn). On Nov. 14th there will be a clinical evening. The Lettsomian lectures for 1933 will be delivered by Mr. Zachary Cope, on the Pathology of Acute Abdominal Disease, and the annual oration by Sir Thomas Horder.

Royal College of Physicians of London

The College will be closed for cleaning from Monday, August 1st, till Saturday, Sept. 9th, both days inclusive.

Opera for Hospitals

In June a grand opera week was held in Birmingham on behalf of the city hospitals. The result was a net profit of £9882, of which about one-tenth was derived from the performances, the bulk of the money being given as donations.

New Hospital at Cromer

The Dowager Lady Suffield last week opened the new Cromer and District Hospital, which has been built at a cost of £20,000 to replace the old cottage hospital. The building is only £200 in debt. There are men's and women's wards each containing 12 beds, two single-bed wards, and a children's ward for six or more beds.

Memorial to a Medical Man

Two beds have been endowed at the Cardiff Royal Infirmary in memory of the late Dr. Thomas Wade Richards and his wife, under the will of the late Miss Sarah Lewis, Mrs. Richards's sister.

Metropolitan Hospital Sunday Fund

It is officially stated that the collections for this fund on June 26th amounted to about £57,000, including £4000 from Sir Heath Harrison and £800 from "X. Y. D." The largest church collection, £470, was at St. Columbia's, Pont-street.

Congress of Plastic Surgery

The third congress of the Société Scientifique Française de Chirurgie Réparatrice, Plastique et Esthétique, will be held in Paris on Oct. 7th and 8th, under the presidency of Dr. Dartigues, from whom particulars may be had at 81, Rue de la Pompe, Paris, XVI.

Congress on the Care of Children

The seventh Congrès International de Protection de l'Enfance will be held in Paris from July 5th–9th next year. The main subjects of discussion will be the Medical Supervision of Sports and the relation between Charity and the State. The five sections of the congress will be devoted to maternity, early childhood, late childhood, abnormal childhood, and social service. Particulars may be had from the secretariat at 26, Boulevard de Vaugirard, Paris, XV.

Post-graduate Courses in Berlin

From Oct. 10th onwards a number of international post-graduate courses will be held in Berlin on general and special subjects. The latter include tuberculosis (Oct. 10th–15th), urology (Sept. 26th–Oct. 1st), medical psychology and psychotherapy (Oct. 17th–22nd), and intrathoracic surgery (Oct. 17th–21st). In the spring there will be further courses on internal medicine, ophthalmology, surgery, X rays, skin and venereal diseases, and pediatrics. Particulars may be had from the information bureau of the Kaiserin Friedrich-Haus, Robert Koch-platz 2, Berlin, N.W.7.

Research Fellowships in Tuberculosis

The Medical Research Council announce that they have awarded Dorothy Temple Cross Fellowships for 1932-33 to: Veronica Bessie Frith Dawkins, M.B., resident medical officer, Maltings Farm Sanatorium, Colchester; Gordon Moncrieff Dean, M.B., late of the department of surgery, Aberdeen University; Evelyn Mary Holmes, M.B., late assistant tuberculosis officer, Welsh National Memorial Association; John Nöel O'Reilly, B.M., late house physician, Brompton Hospital, London; Walter Graham Scott-Brown, F.R.C.S., assistant surgeon, throat, nose and ear department, Royal Free Hospital, London. Dr. Dean will study problems of tuberculosis at Baltimore; the others at different European centres.

Fellowship of Medicine and Post-Graduate Medical Association

Dr. G. F. Stebbing will give a demonstration of selected cases of general interest at the Lambeth Hospital, Brook-street, S.E., at 2.0 P.M., on Friday, August 5th. Application for attendance at this demonstration should be made to the Fellowship by August 3rd. During August the only special course will be in urology, at the All Saints Hospital, Austral-street, West-square (the new hospital buildings). It occupies afternoons and evenings, and consists of clinical demonstrations. Individual clinics at various London general and special hospitals may be attended by special arrangement with the Fellowship. The secretary's address is 1, Wimpole-street, London, W.1.

Kent and Sussex Hospital

The Duchess of York last week laid the foundation-stone of the new Kent and Sussex Hospital at Tunbridge Wells, which will combine the existing Tunbridge Wells General Hospital and the Eye and Ear Hospital.

Hospital Scholarships

The following scholarships have lately been awarded:—

Guy's Hospital Medical School.—University scholarship: D. F. G. Moir (Oxford). Exhibition: P. W. Clarkson (Edinburgh).

London Hospital Medical College.—Freedom scholarship in pathology: Mr. J. R. G. Harris (Cambridge).

Royal Free Hospital.—A. M. Bird post-graduate scholarship in pathology: Miss R. O. J. Clark, M.B. Mabel Webb and A. M. Bird research scholarship: Miss U. Shelley, M.B. Special A. M. Bird research scholarship: Miss Margaret Salmond, M.D.

St. Bartholomew's Hospital Medical College.—University scholarship: J. W. A. Turner (Oxford). Exhibition: G. Blackburn (Cambridge) and A. R. Kelsall (Cambridge), equal.

St. Thomas's Hospital Medical School.—University scholarship: H. T. Laycock (Cambridge). Exhibition: J. R. Rose (Cambridge).

University College, London.—Bayliss-Starling memorial scholarship: C. H. Gray.

University College Hospital Medical School.—Goldsmid entrance scholarships: W. C. Chapman (Oxford) and W. A. Pritchard (University College). Goldsmid entrance exhibition: L. N. G. Lytton (Cambridge). Filliter entrance scholarship in pathology: C. G. Roworth (University College).

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, August 1st, to SATURDAY, August 6th.—LAMBETH HOSPITAL, Brook-street, S.E. A demonstration of Selected Cases of General Interest on Frid., at 2 P.M., by Dr. G. F. Stebbing, assisted by the Staff of the Hospital.

Births, Marriages, and Deaths

BIRTHS

GILLAM.—On July 12th, the wife of J. F. E. Gillam, F.R.C.S. Haverfordwest, of a son.

SABONADIERE.—On July 19th, at St. Benet's, Alexandra-avenue, Great Yarmouth, the wife of Dr. Richard, Sabonadiere, of a son.

STIELL.—On July 21st, at Welbeck-street, W., the wife of Dr. Gavin Stiell, of a son.

TRAFFORD.—On July 20th, at Grafton House, Warlingham, the wife of Dr. Harold Trafford, of a son.

MARRIAGES

BENTON—BOON.—On July 19th, at West Bridgeford, Notts, by the Rev. J. O. Dobson, Sidney Bevan Benton, M.R.C.S., L.R.C.P., younger son of Dr. and Mrs. William Benton, of Forest Gate, London, to Ethel Mary, eldest daughter of Mr. and Mrs. George B. Boon.

DEATHS

CARROL-OTWAY.—On July 18th, suddenly, Alfred Carrol-Otway, M.R.C.S., L.R.C.P., of Castelnau, Barnes, S.W., aged 74.

COLDSTREAM.—On July 22nd, killed while on duty in the Civil Hospital, Peshawar, Captain William John Anson Coldstream, I.M.S., F.R.C.S.E.

CREWE.—On July 21st, at Smeeth, Kent, Clifford Crewe, M.D. late of Shelley House, Essex, and Guernsey.

HARRIS.—On July 18th, at Trevalsa, Wadebridge, Cornwall, William Harris, M.D., F.R.C.S.

HOLMES.—On July 24th, at Llanishen, Cardiff, J. V. Holmes, M.B., B.Ch., B.A.O., D.P.H.

NAIRN.—At his residence, "Makirikiri" Hastings, New Zealand, on April 8th, 1932, Robert Nairn, F.R.C.S. Eng., aged 70 years.

STEELE.—On July 23rd, John Leslie Fisher Steele, M.B., B.Ch., T.C.D., of Montagu Mansions and Upper Wimpole-street, W.

WILSON.—On July 19th, at Blossom-street, York, William Brockie Wilson, M.B., Ch.B., late of Singapore, aged 42 years.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

THE NEW DIRECTION IN PSYCHOLOGY

THE new direction in psychology and neurology is being felt in all works which deal with general principles. Prof. R. H. Wheeler [1] presents the case of organismal psychology in a vigorous way, and makes no bare speculative attempt at dealing with the "organism as a whole." His work derives its scientific foundations from the physiological concepts made familiar to us by Lillie and Childe, and from the psychology of *Gestalt*, exemplified in the publications of Wertheimer, Köhler, and Koffka. In rejecting the dualism of the old psychology and dissolving the dilemma of the body-mind in the concept of organism, Prof. Wheeler equally rejects the facile mechanistic doctrines of the behaviourists. But whereas he rejects the reflexology of the last school with its allied associationistic psychology, he does adopt their critique of instincts, replacing those inherited drives by a view of perception and learning which is novel and stimulating if not always convincing. Equally daring is his trenchant rejection of attention as the motivator of perception, and his arguments in favour of the cognitive nature of feeling. The binding link of Prof. Wheeler's standpoint is the essential oneness of all the dynamic processes of living and non-living matter. To him, dynamic gradients obey the same principle of whole reaction of a system to its milieu, whether they are the gradients of a gravitational field or the adjustment of the whole organism to its environment. The argument calls for close study.

Mr. Fox [2] opens his examination with a critical dissection of the concepts of neurology. Years of contact with the materialistic concepts of physiology has allowed many of us to accept without question the basic terms of neurology as if they were established facts, and we have thence argued to the establishment of a dynamics which explains consciousness in neural terms. In two trenchant chapters the author exposes the conceptual nature of these basic terms, and from a close study of the implications of the work of Lashley on cortical function, and the phenomena of aphasia and allied disorders, he reveals how neurology has all along borrowed from associationist psychology—clothing with neural terms its essential nakedness. The author examines the concept of mental energy, showing that this term is borrowed illegitimately from mechanics, which again is influenced by the experience of mental activity. His theory of images is in many ways peculiar and calls for close study, since he makes it the basis of a theory of psychic initiative on which his thesis—functional psychology—is based. This thesis links up with McDougall's theories of instinct and emotion. But Mr. Fox by no means goes all the way with McDougall. His point of view is startling to those who are used to the concept of images as stored perceptions. What actually takes place in the act of imaging is the revival of our subjective states, which leads us to believe that we are again experiencing the original perceptions. The whole field of psychology is reviewed with candour and with a freedom from accepted and unexamined prejudices. This work may not convert the neural mechanists, but will lead many to re-examine their basic concepts, and some at least to realise that psychology has something to add to our understanding of the workings of the body.

Familiar historic ground is covered by Mr. F. Aveling, D.Sc.,[3] but it is presented in a new way. The modern views on conation are set out as a preparation to the study of instinct and the will, and the relation of will to conation is so discussed as to bring out the autonomous nature of will as an operation distinguished from conational striving. A considerable amount of the experimental work done in recent years is incorporated, without burdening the reader with actual technical detail. The final chapter is an attempt to relate personality to the author's conception of will, and his belief in freedom is adumbrated. Personality he defines as "that final conception which virtually includes in itself all principles of human activity and constitutes a unitary, self-conscious (and to some extent at least) self-determining individual." Dr. Aveling's conception of self-awareness implies the existence of the self as substance. Will is a more fundamental process than knowing. "The essential orientation of living organisms towards their natural goals can be taken, on analogy with our own conscious will, as evidence of unreflective, semi-conscious, and even totally unconscious will." This view has a bearing on psychopathology, and it is this recognition of this deeper motivation which commends the essay to psychiatric students.

Prof. Wheeler's [4] standpoint in his second and larger book is that of the configurational psychology made familiar to us by Köhler, Koffka, and certain American writers. He has arranged a text-book on new lines; it is entirely founded upon laboratory analyses and experimental investigation. The method of exposition is based on behaviour rather than upon introspective aspects of mind, but the viewpoint is not "behaviouristic" in the strictly Watsonian sense. The book is essentially modern, and is a pleasant relief after the stereotyped academic books of a past generation.

Hitherto, works on psychological measurements have dealt almost exclusively with the assessment of intelligence and *abilities*. With the advent of the work of Colvin, Pressey, Downey, Hollingworth, and Cattell, the centre of importance has changed to the measurement of emotion and temperament. This new orientation has naturally received its stimulus from the field of psychopathology, where Freud, Jung, and McDougall have proved the rôle played by emotion in determining character and conduct. Prof. Symonds [5] has produced an admirable survey of the tests and methods of assessing personality and temperament which is timely. His book is of value not merely because of the vast field of tests which it covers, but because of its scientific method of approach. Indeed, the reader has to follow closely the discussions of such statistical matters as methods of rating, and incidentally each method is examined in the light of its statistical validity. The three main chapters are on the questionnaire method of rating *adjustment*, *attitude*, and *interest*. Most interesting, particularly to those who use mental tests, will be the chapter on the use of performance tests in assessing temperament. Everyone acquainted with intelligence tests knows that while these tests give invaluable data for non-verbal intelligence, they shed considerable light on temperament. All the variety of physiological tests of conduct and personality are considered, including the psycho-galvanic reaction. Of the non-quantitative methods, reaction words, free association, and psycho-analysis are included. The section on measurement of the environment should be read by all psychiatrists who have to consider the sociological factors in child guidance work—a field in which there is a danger of easy qualitative diagnosis of the weight of certain factors.

A liberal bibliography is attached to each chapter. This work should certainly find a place in libraries attached to psychiatric clinics.

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[1] The Laws of Human Nature. By Raymond H. Wheeler, Ph.D., Professor of Psychology, Kansas University. Contemporary Library of Psychology. London: University Press. Pp. 232. 5s.

[2] The Mind and its Body: The Foundations of Psychology. By Charles Fox, M.A., International Library of Psychology. London: Kegan Paul. Pp. 316. 10s. 6d.

[3] Personality and Will. By F. Aveling, D.Litt., D.Sc., Ph.D., Reader in Psychology, London University. The Contemporary Library of Psychology. London: London University Press. Pp. 245. 5s.

[4] The Science of Psychology. By Raymond H. Wheeler, Professor of Psychology at the University of Kansas. London: Jarrolds. Pp. 531. 21s.

[5] Diagnosing Personality and Conduct. By Percival M. Symonds, Ph.D., Associate Professor of Education, Teachers' College, Columbia University. New York: The Century Co. 1932. Pp. 602. 21s.

A "CINEMA UNIVERSITY"

In his foreword to the report issued last year by the Birmingham Cinema Inquiry Committee, Sir Charles Grant Robertson said: "We believe that this great instrument which modern science has given us can be, indeed is bound to be, a tremendous and inexhaustible source of recreation and education." Nobody doubts the widespread influence of the cinema, especially upon young people, and Sir James Marchant, in an address broadcast from London in October, 1929, called attention to the fact that children who habitually frequent the cinema undoubtedly develop a remarkable power of observation, and acquire a richer fund of general knowledge than those who do not.

For some time past, Sir Oswald Stoll and Sir James Marchant have been planning to establish a People's Cinema University in London, the chief object of which is to provide a cultural centre for the practical application, study, and development of cinematography in all its branches. A central building, easily accessible from all parts of London, is to be supplemented by a number of lecture halls or theatres equipped with sound-film installations for regular exhibition of suitable films. The cinema university is to be open for both day and evening performances, at nominal fees within the reach of all. Lecture films with demonstrations will be given on a wide range of subjects connected with science, history, travel, and literature; teaching of foreign languages and handicrafts; and development of social life and hygiene, as well as lectures on games, sports and physical culture. In the central dome a Zeiss Planetarium is to be set up. This instrument projects upon the dome images of the sun, moon, planets, stars, and, in fact, produces a complete artificial sky, from which the study of astronomy is brought within the experience of all who care to avail themselves of it. The promoters believe that the university cinema can be made financially successfully.

Schools, colleges, and institutions will be supplied with educational and cultural films, which will be distributed and collected by motor vans throughout the country. Experts whose help has been enlisted include such honoured names as Sir J. Arthur Thomson, Sir Charles Oman, Prof. H. H. Turner, Prof. Lyde, Prof. Blair, and Sir Walford Davies. The grievance of teachers hitherto has been that they are trying to teach appreciation of the good and beautiful by means of appeal only to the ear, while all too often the children's taste is being vitiated by the sensationalism of the films, with their more impressive appeal to the eye. The aim of the cinema university, Sir James Marchant says, is to assist the teacher by presenting him with the most efficient means of securing his pupils' interest. The teacher must prepare the background of knowledge which will enable the child to appreciate what appears on the screen, and he must diligently follow up the interest created by the cinema.

It will be remembered that a clause was introduced by Major Stanley at the third reading of the Sunday Entertainments Bill, providing for a cinema fund for the purpose "of encouraging the use and development of the cinematograph as a means of entertainment and instruction," to take the form of a levy on the proceeds of Sunday cinemas. The fund was to be administered by the Privy Council and the percentage of the levy prescribed by the Home Secretary. The clause was carried by 18 votes after a heated discussion. The use of the cinema in this country for culture as well as amusement is evidently in the ascendant.

ROYAL SOUTHERN HOSPITAL, LIVERPOOL.—Last year 3695 in-patients were admitted and, notwithstanding that the out-patient department is now used only for consultation purposes, except in cases of accident and emergency, there were more than 36,000 new patients. The loss on the year's working was £11,769.

Appointments

CRAVEN, J. W., M.D., B.S. Durh., has been appointed Medical Superintendent, Auckland Hospital, N.Z.

DALY, ASHLEY S., M.R.C.S., Anæsthetist to the Freemasons Hospital, London.

SUTHERLAND, JEAN, M.B., B.S. Edin., Assistant Medical Officer of Health, Hornsey.

Vacancies

For further information refer to the advertisement columns.

Ashton-under-Lyne, District Infirmary.—H.S. At rate of £150.
Bootle General Hospital.—Two H.S.'s, H.P. and Cas. O. Each at rate of £150.
Bradford Royal Infirmary.—Two H.S.'s. Each at rate of £135.
Brisbane, Australia, Brisbane Clinic.—Surgeon for Ear, Nose and Throat. £500.
Bristol Royal Infirmary.—H.P.'s and H.S.'s. Each at rate of £60. Also Cas. H.S. At rate of £100.
Burnley, Victoria Hospital.—H.S. At rate of £150.
Bury Infirmary, Lancs.—H.S. to Special Depts. Also Third H.S. At rate of £175 and £150 respectively.
Cancer Hospital, Fulham-road, S.W.—Asst. Radiologist. £350.
Chester Royal Infirmary.—Hon. Anæsthetist.
City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.—H.P. At rate of £100.
Colchester, Essex County Hospital.—Asst. H.S. £120.
Coventry, City of.—Deputy M.O.H. £750.
Croydon General Hospital.—Cas. H.S. £125.
Doncaster Royal Infirmary.—Cas. H.S. and H.P. Each at rate of £200.
Dorchester, Dorset County Hospital.—H.S. At rate of £160.
East London Child Guidance Clinic.—Hon. First Asst. Psychiatrist. Also Clin. Assts.
East London Hospital for Children, &c., Shadwell, E.—Res. H.P. and Cas. O. Each £125
Evelina Hospital for Sick Children, Southwark, S.E.—Hon. Physician to Out-patient's.
Hammersmith Hospital, Ducane-road, Shepherds Bush, W.—Part-time Radiologist. At rate of £125.
Hastings, Royal East Sussex Hospital.—Jun. H.S. £150.
Hull Royal Infirmary.—Third H.S. and Asst. H.P. for Parent Institution. Each at rate of £150. Also H.S. for Sutton Branch Hospital. At rate of £160.
Lincoln County Hospital.—Jun. H.S. At rate of £150.
Manchester, Ancoats Hospital.—H.S. At rate of £100.
Manchester, Victoria Memorial Jewish Hospital, Cheetham.—Jun. H.S. At rate of £125.
Middlesex Hospital, W.—Sen. and Jun. Res. Asst. Anæsthetist. £120 and £80 respectively.
Newcastle-on-Tyne, Wooley Sanatorium, nr. Hexham.—Jun. Asst. M.O. £250. Also Locum Tenens to Med. Supt. 7 guineas weekly.
Newcastle-upon-Tyne, Royal Victoria Infirmary.—Res. M.O. £350.
Nottingham Hospital for Women.—H.S. At rate of £150.
Oxford, The Warneford.—Asst. M.O. £300.
Plymouth, South Devon and East Cornwall Hospital.—H.S. At rate of £100.
Preston, Lancs, Wrightington Hospital, Parbold.—Jun. Asst. M.O. £200.
Putney Hospital, The Lower Common, S.W.—Res. M.O. At rate of £150.
Reading, Royal Berkshire Hospital.—Cas. O. £150.
Rotherham Hospital.—Sen. H.S. £200. Also Cas. H.S. £150.
Royal Northern Hospital, Holloway, N.—H.P. At rate of £70.
St. George in the East Hospital, Raine-street, E.—Res. Med. Supt. £950.
St. Nicholas Hospital, Plumstead, S.E.—Part-time Radiologist. At rate of £125.
Salisbury General Infirmary.—H.S. and H.P. Each at rate of £150.
Sheffield Children's Hospital.—H.S. At rate of £100.
Sheffield, Jessop Hospital for Women.—Two H.S.'s. Each at rate of £100.
Sheffield Royal Infirmary.—Aural H.S. and Asst. Aural and Ophth. H.S. Each at rate of £80.
Shrewsbury, Royal Salop Infirmary.—Cas. O. and Res. Anæsthetist. At rate of £160.
Southampton, Royal South Hants. and Southampton Hospital.—Res. Surg. O. At rate of £200.
South Shields, Harton Hospital.—H.S. £150.
South Shields, Ingham Infirmary.—Jun. H.S. £150.
Stamford, Rutland and General Infirmary.—H.S. At rate of £200.
Stockport Infirmary.—Jun. H.S. £150.
Stoke-on-Trent Orthopædic Hospital.—H.S. £150.
Swansea, General and Eye Hospital.—H.P. At rate of £150.
Swindon and North Wilts Victoria Hospital.—Res. M.O. £125.
Taunton, Taunton and Somerset Hospital.—Sen. and Jun. H.S.'s. At rate of £150 and £100 respectively.
Tunbridge Wells and Counties General Hospital.—H.S. £160.
Ventnor, Royal National Hospital for Consumption and Diseases of the Chest.—Jun. Asst. Res. M.O. At rate of £300.
Winchester, Royal Hampshire County Hospital.—H.S. At rat of £125.
Wolverhampton Royal Hospital.—H.S. At rate of £100.

The Chief Inspector of Factories announces a vacant appointment for a Certifying Factory Surgeon at Newmilns (AYR).